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DEVELOPMENT OF ECONOMICS CURRICULAR MATERIALS FOR SECONDARY SCHOOLS. FINAL REPORT.

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OHIO STATE UNIV., COLUMBUS, RESEARCH FOUNDATION

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DESCRIBED IS THE DEVELOPMENT OF ECONOMICS CURRICULAR MATERIALS FOR THE SECONDARY SCHOOLS. THE MATERIALS CONSIST OF 18 UNITS INTENDED FOR USE DURING ONE SEMESTER. A REPEATED PATTERN IN EACH UNIT IS (1) A TEACHER'S GUIDE TO THE CONCEPT AND THE PROBLEMS OF PRESENTING THE CONCEPT, AND (2) VARIOUS STUDENT MATERIALS. THE BALANCE OF THE MATERIAL CONSISTS OF A DISCIPLINED, SEQUENTIAL PRESENTATION DESIGNED FOR TEACHER ORIENTATION AND STUDENT DISCOVERY. DESIGNED FOR NINTH GRADE STUDENTS, THE MATERIALS CAN ALSO BE USED IN GRADES 10-12. THE REPORT INCLUDES (1) A COURSE RATIONALE, (2) A COURSE EVALUATION, AND (3) A DISCUSSION OF THE RELEVANCE OF THE PROJECT TO THE SOCIAL STUDIES CURRICULUM. ITEMS APPENDED INCLUDE (1) EDUCATIONAL OBJECTIVES BY UNIT, (2) MULTIPLE CHOICE TESTS AND WRITTEN EXERCISES WITH EVALUATION DATA FROM THE PROJECT, AND (3) AN INSTRUMENT FOR MEASURING THE DEGREE OF TEACHER ADHERENCE TO THE DISCIPLINE APPROACH. (DS)

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development of ECONOMICS CURRICULAR MATERIALS for Secondary Schools

Meno Lovenstein
Edward J. Furst
Robert Jewett
Elizabeth Steiner Maccia

1966

SE 003 460

The Ohio State University
Research Foundation

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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INTRODUCTION

Background of the Project

In 1962 secondary school curricular improvements in the physical sciences, in the biological sciences, and in mathematics had been initiated. Curricular improvements in social studies, however, largely had been neglected. In order to discuss ways of improving the social studies curriculum on the secondary level, E. Maccia, a philosopher in the Bureau of Educational Research and Service of The Ohio State University, brought together in the spring of 1962 other faculty members of The Ohio State University: one from each of the subjects constituting the grouping called 'the social studies', as well as one who was a specialist on evaluation and one on social studies education. The faculty members were the following:

R. Dynes, Department of Sociology,
E. Furst, Department of Psychology and
Specialist on Evaluation,
R. Jewett, Department of Education and
Specialist on Social Studies Education,
M. Lovenstein, Department of Economics,
D. Spitz, Department of Political Science,
J. Villmow, Department of Geography, and
M. Young, Department of History.

The discussions of these faculty members concerning the problem of improving the social studies curriculum in the secondary schools resulted in the general conclusion that curricular materials should be developed according to some organizational principle and should be evaluated according to some student behavioral outcomes. A specific conclusion of the group was that one organizational principle which should be tried out is the discipline-centered approach.

Subsequently, E. Furst, R. Jewett, M. Lovenstein, and E. Maccia prepared a proposal for a project in which the organizational principle for developing curricular materials for a ninth grade course in economics would be the discipline-centered approach. Moreover, the curricular materials when developed would be evaluated with respect to student behavioral outcomes.

Work of the Project

The work of the project involved the following tasks:

1. development of a basic rationale for the project, both with respect to the procedure of the project and to the theory upon which the course was developed,
2. development of the theory of the course, both the student behavioral outcomes and the why and how of the structuring of the curricular materials,
3. preparation of the curricular materials of the course, both those for the teacher and those for the student,
4. evaluation of the curricular materials, and
5. indication of the relevance of the project for the social studies curriculum.

Outline of the Project Report

The report of the results of the project parallels the work of the project. The report, therefore, consists of chapters which present sequentially:

1. the rationale of the project,
2. the theory of the course,
3. the curricular materials of the course,
4. the evaluation of the curricular materials, and
5. the relevance of the project.

CHAPTER I

DEVELOPMENT OF CURRICULAR MATERIALS AND THE DISCIPLINE-CENTERED APPROACH

In this development of economics curricular materials for the ninth grade, the organizing principle was the discipline-centered approach. Moreover, the development was a research endeavor: both theory and evaluation were involved. In this chapter, the rationale of the project both with respect to its research nature and to the theoretical delineation of the approach is presented. The rationale, furthermore, is general so that it is applicable to any discipline-centered approach. In other words, the rationale is set forth as a theoretical paradigm for any development of curricular materials.

Curriculum Theory and Research

To do research not only is to establish claims but also to formulate them. In fact, without the formulation of claims, it is impossible to evaluate them. Claims must be stated unambiguously and precisely in order that what is to be evaluated is clear. Once what is to be evaluated is clear, then the proper evaluation procedure can be employed.

Claims about curriculum must meet certain general requirements, if they are to constitute theory. To begin with, theory is speculation, even if the theory is empirical, i.e. is about experience. One cannot approach experience without theory. Percepts (data) without concepts (claims) are blind.

> . . . before every study of facts a special kind of theoretic work is always necessary: to put down an instrumentorium of conceptions, a system of logically coherent problems to be solved by empiric research.[1]

Speculation, nevertheless, would be sheer speculation, unless there is a way of determining its warrant. Evaluation must be possible, since concepts without percepts are empty. The quotation indicates yet another requirement, the requirement of coherence. The claims set forth in the process of theorizing must be related in some systematic way. A heap of claims do not make a theory. Finally, the claims of a theory must be generalizations. The very essence of a generalization is that it holds for all times and places. To state the matter differently, the claims of a theory must be noncontextual in terms of time and place.

Curriculum Theory and Policy

The requirement that curriculum theory consists of generalizations permits sorting out curriculum theory from curriculum policy. Policy is a definite course of action, selected from alternatives in the light of given conditions, to guide present and future decisions.

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[1]Gerhard Mackenroth, Theoretische Grundlagen der Preisbildungsforschung und Preispolitik (Berlin: Sozialwissenshaftlichen Studien, 1933), p. v.

Adequate curriculum policy, thus, is adequate curriculum theory of practices adjusted to the given conditions of the time-place context in order to provide directives for curriculum practices. The adjustment would be the task of the curriculum specialist and/or the teacher and not of the curriculum researcher (the curriculum theorist and evaluator). In this project, therefore, the investigators' primary concern was not with curriculum policy.

Full cognizance is given to the fact that what ought to be is not always what happens. Policy is recognized as an expression of the power structure of a given group of persons as to the practices they take to be expedient. Conditions, such as lack of financial resources, or counter-claims about curriculum practices can mitigate against curriculum practices based upon practical curriculum knowledge and upon the art of adjustment exhibited by the curriculum specialist and/or the teacher.

Kinds of Curriculum Theory

Curriculum theory of practices has been mentioned already. A practice is a group of human actions, which may or may not involve material objects as instruments, directed toward specified outcomes. Curriculum theory of practices (praxiological[2] curriculum theory), hence, consists of claims about curriculum practices, e. g. about actions involving a textbook directed toward specified student behavioral

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[2]The term, 'praxiological', is taken from Tadeusz Kotarbinski's "Praxiological Sentences and How They are Proved," in Logic, Methodology and Philosophy of Science, edited by Nagel, Suppes, and Tarski, (Stanford, California: University of Stanford Press, 1962), pp.211-223.

outcomes. But these are not the only claims that can be made about curriculum.

Claims can be made about what curriculum is, how curriculum relates to the teaching-learning process or instruction. For example, should a claim be made that curriculum is content within instruction? Curriculum theory which consists of such claims I shall call 'event curriculum theory'.

Since curriculum must be formed, claims must be made about the logic of the content taken to be curriculum. Logic need not be kept within the bounds set by the rationalistic temper and maintained today by scientific empiricism[3] and logical empiricism[4]. Indeed, if it is, there is every reason to believe that one would be unable to set forth the logic of most of the content taken to be curriculum.

Wittgenstein states the matter in a cogent way:

> The more narrowly we examine actual language, the sharper becomes the conflict between it and our requirement. (For the crystalline purity of logic was, of course, not a result of investigation: it was a requirement.) The conflict becomes intolerable; the requirment is now in danger of becoming empty.[5]

At any rate, claims about the logic of curriculum content constitute a third kind of curriculum theory, formal curriculum theory.

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[3]Charles W. Morris, "Scientific Empiricism," International Encyclopedia of Unified Science (Chicago: University of Chicago Press, 1938), Volume 1, Part 1, pp. 63-75.

[4]H. Feigl, "Logical Empiricism," Readings in Philosophical Analysis, edited by Feigl and Sellars (New York: Appleton-Century-Crofts, 1949), pp. 3-26.

[5]Ludwig Wittgenstein, Philosophical Investigations (New York: The Macmillan Co., 1935), paragraph 107.

Finally, claims must be made as to what student behavioral outcomes are valuable and so ought to be specified within curriculum practices. Valuational curriculum theory consists of claims of this sort.

The four kinds of curriculum theory can be sorted into two categories on the basis of the kind of warrant required to establish the claims. Event curriculum theory and praxiological curriculum theory are empirical in nature. Through experience, both claims about the relation of curriculum to the teaching-learning process and claims about the relation of curriculum actions to specified student behavioral outcomes can be checked out. Valuational curriculum theory and formal curriculum theory are philosophical in nature. Being philosophical, these two kinds of theories cannot have their warrant in experience.

Valuational theory, whether it be about student behavioral outcomes with respect to curriculum or not, consists of claims about ideal kinds and structures of events. An excellent illustration of such theory is found in Plato's Republic, and his words make clear that he is not theorizing about experience in the sense of what is or will be:

> "Well," said I, "in heaven, perhaps a pattern of it is indeed laid up, for him that has eyes to see, and seeing to settle himself therein. It matters nothing whether it exists anywhere or shall exist; for he would practice the principles of this city only, no other."[6]

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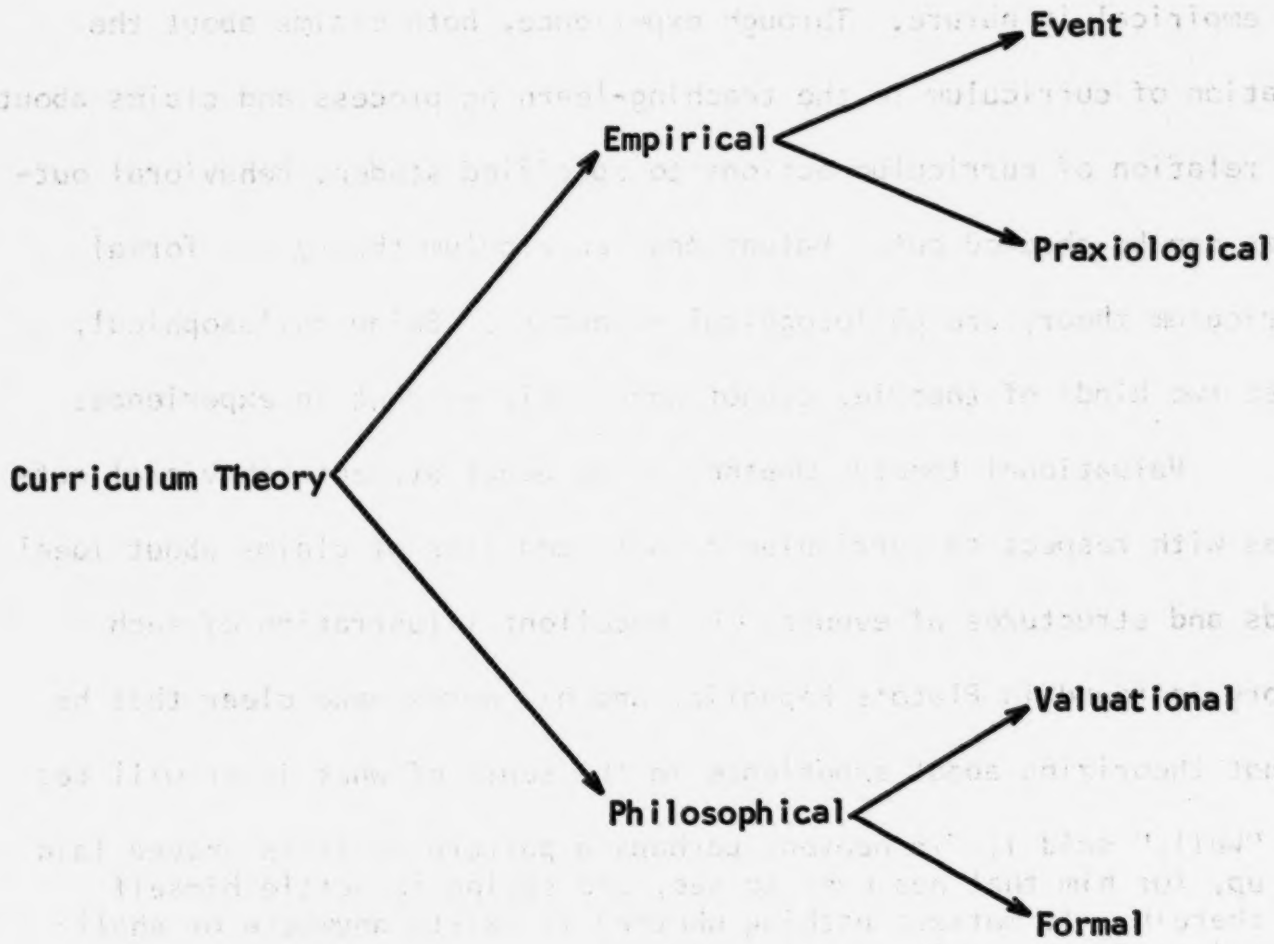
[6] The Republic, translated by W. H. D. Rouse, Book 9, 592.

The warrant for formal curriculum theory depends upon logical analysis. As Wittgenstein tells us:

> These are, of course, not empirical problems; they are solved, rather, by looking into the workings of language, and that in such a way as to make us recognize these workings: in spite of an urge to misunderstand them.[7]

Schema 1 summarizes the kinds of curriculum theory with their respective kind of warrant.



Schema 1: Kinds of Curriculum Theory

Although kinds of curriculum theory can be distinguished, yet they relate to one another. Their interrelations will become patent

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[7] Op. cit., paragraph 109.

after the theoretical delineation of a discipline-centered approach to the development of curricular materials is presented.

Discipline-centered Approach

The discipline-centered approach is an event curriculum theory in which curriculum is the content within instruction. This theory then provides a basis for the formal curriculum theory with its inherent valuational curriculum theory which in turn provides the basis for the praxiological curriculum theory.

To understand what is involved in the event curriculum theory, the meaning of 'discipline' must be made explicit. 'Discipline' comes from the Latin, 'discipulus', meaning disciple. Because a disciple is one who learns ('<u>discipulus</u>' comes from '<u>discere</u>', to learn) by following the teaching of his master, in its most general sense 'discipline' means

1. instruction.

Instruction, then, is a relational term requiring two events for its exemplification--teaching and learning. Only teacher behavior, B_T, as it relates to student behavior, B_S, produces instruction, I. Stated more precisely, instruction is, =, a function of, *f*, the relation, R, between teacher behavior and student behavior. The symbolic statement is as follows:

$$I = f(B_T \; R \; B_S)$$

Because instruction involves learning, a student behavioral change, instruction is an influence relation. Influence comes from the Latin, '<u>infuere</u>', meaning causing to flow in. Influence, thus, can be viewed as a building up with respect to a student's behavior.

Since instruction is influence, it is not difficult to ascertain how 'discipline' also means

2. regulation.

Where there is discipline in the sense of instruction, there must be regulation. In instruction, behavior is regulated in the sense of becoming governed by a rule or rules. A rule is a reason or criterion which is evidenced in one way of behaving rather than another way of behaving. Instruction, consequently, is influence toward rule-governed behavior; it is a building up of rules with respect to a student's behavior.

Other senses of 'discipline' are specifications within discipline as instruction and as regulation. These meanings indicate modes of instruction and of regulation, and are:

3. perfection of mental faculties,

4. punishment,

5. submission to authority,

6. rules of practical conduct, and

7. organized branches of knowledge.

Little need be said about discipline as perfection of mental faculties. This meaning rests upon faculty psychology which is recognized as fallacious. Hypostatization of mental faculties, which are capable of strengthening and so being perfected, no longer is considered a fruitful approach. Nonetheless, it is important to mention this meaning to prevent premature discounting of discipline as a basis for organizing curriculum. Some might conceive discipline only in this sense, and so reject the possibility of discipline-centered curriculum.

Discipline as punishment and as submission to authority relates to the motivational aspect of instruction or regulation. The student might be instructed or his behavior might be regulated, because punishment or the teacher's authority operates as a motivational basis. Since in its most general sense 'authority' means power to influence, exercise of authority could be based upon extrinsic factors--punishment, reward, position, expertise, and affection--or the intrinsic factor of curriculum or any combination thereof. In a less general sense of 'authority', position or expertise or both are implicated. In the least general sense, only expertise is. But the term, 'submission', indicates an exercise of authority in which argumentum ad baculum is central. Punishment as the motivational basis is an exercise of authority which takes the form of authoritarianism. Discipline as punishment, and so as submission to authority, can be set aside as a viable centering for the organization of the curriculum, for curriculum is the content of instruction and may be an intrinsic motivational factor but not an extrinsic one.

Discipline as rules of practical conduct and as organized bodies of knowledge does relate to curriculum taken as the content of instruction. It is 'discipline' in these senses which is of significance as a centering of curriculum. Organized bodies of knowledge too are rules of behaving. Whether they consist of rules of practical conduct depends upon whether they are praxiological bodies of knowledge, such as medicine and engineering. Other rules of practical conduct are non-general in the sense that they are contextual with respect to time and place. They are on the level of policy.

To complete this event curriculum theory, consideration must be given to the role of the learner. The learner's behavior is not reactive but active. His behavior does not become governed by rules, because they are stamped on him. He imposes rules on himself, when he discovers them in the curriculum or extrinsic motivation presented.

Winch has set forth a simple illustration which might aid in grasping the distinction between active and reactive behavior as it relates to rules:

> The dog responds to N's commands now in a certain way because of what has happened to him in the past; if I am told to continue the series of natural numbers beyond 100, I continue in a certain way because of my past training. The phrase 'because of', however, is used differently of these two situations: The dog has been conditioned to respond in a certain way, whereas I know the right way to go on on the basis of what I have been taught.[8]

To the above, if the illustration is to be complete, add the following:

> I go on in this way, because I have discovered this rule of mathematics or some extrinsic rule--such as avoidance of punishment--as a criterion of right behavior which is my reason for behaving in this manner.

The person, therefore, acts according to rules. He is not acted upon. He is not a thing. A thing is an entity without ends, and so simply reacts. Even punishment to regulate behavior involves active behavior, as indicated in my addition to Winch's illustration. If one contests punishment of the learner, he does so on the grounds that such a rule of teaching is not valuable because it sets conditions so that a learner might apply an undesirable rule of behavior. The contesting is philo-

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[8]Peter Winch, The Idea of a Social Science (London: Routledge and Kegan Paul, 1958), p. 62.

sophical, for what is at issue is what is taken to be valuable rule-governed behavior.

Besides the symbolic statement, $I = f(B_T \ R \ B_S)$, two other symbolic statements may be presented to summarize the event curriculum theory presented above:

$$B_T = f(C_P \ R \ EM_P)$$

where 'C_P' stands for curriculum presented and 'EM_P' stands for extrinsic motivation presented; and

$$B_S = f(C_D \ R \ EM_D)$$

where 'C_D' stands for curriculum discovered and 'EM_D' stands for extrinsic motivation discovered.

Before turning to the nature of the formal curriculum theory which is based on this event curriculum theory, it should be emphasized that the placing of curriculum within instruction merges content and method not only in teaching but also in learning. Curriculum as presented involves not only the content of a subject but also the methods involved. Curriculum as discovered involves an inquiry process into problematic content situations.

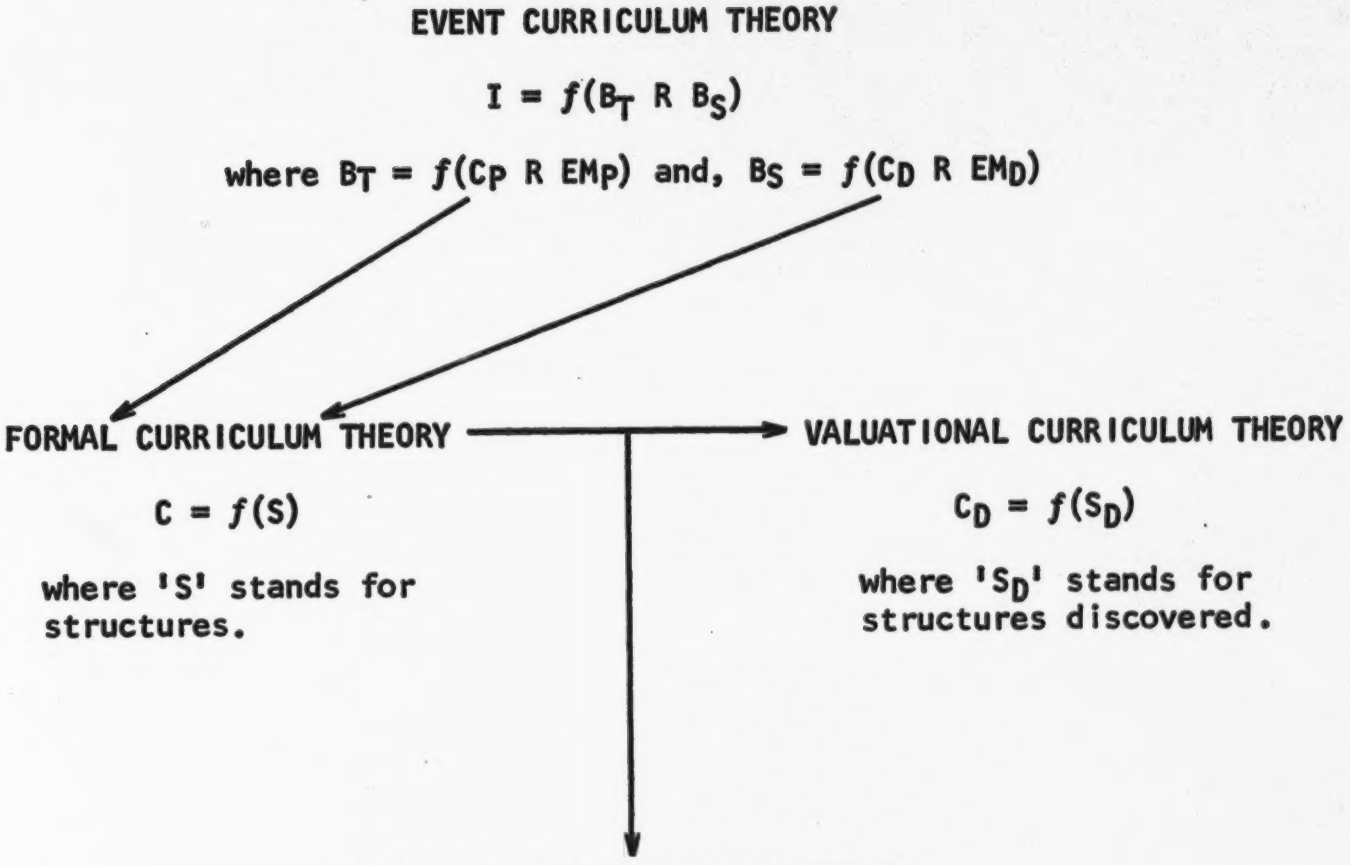
Instruction is taken to be the building up of rules. Formal curriculum theory in which the logic of a domain is worked out for presentation and discovery of rules, therefore, is essentially a task of structuring the domain. In any structure or structuring, there are rules for putting together the elements and rules which are the elements as specified. The discipline-centered curriculum approach, thus, is the basis for a formal curriculum theory in which structure becomes paramount.

Once the organized body of knowledge or the rules of practical conduct have been selected for structuring, the result is that what is selected is taken as valuable for discovery by the student. The student behavioral outcome of discovering the structure which has been set forth becomes the outcome which is considered of worth. The valuational curriculum theory, hence, is inherent in the formal curriculum theory.

Upon the basis of the formal curriculum theory with its inherent valuational theory, the praxiological theory is developed. The curricular materials related to the discovery of structure are dynamic. They are not merely packages to be handed to teachers and students. They require a certain way of behaving, and so learning situations as well as directives are included with the outline of structure.

Theoretical Paradigm

Schema 2 on the next page summarizes the rationale of the project and sets it forth as a theoretical paradigm for the development of any curricular materials.


EVENT CURRICULUM THEORY
$I = f(B_T \ R \ B_S)$
where $B_T = f(C_P \ R \ EM_P)$ and, $B_S = f(C_D \ R \ EM_D)$
FORMAL CURRICULUM THEORY
$C = f(S)$
where 'S' stands for structures.
VALUATIONAL CURRICULUM THEORY
$C_D = f(S_D)$
where 'S_D' stands for structures discovered.
PRAXIOLOGICAL CURRICULUM THEORY
$CP = f(S_D \ R \ CM)$
where 'CP' stands for curriculum practices and 'CM' for curricular materials.

Schema 2: Theoretical Paradigm for the Disciplined-centered Approach to the Development of Curricular Materials

CHAPTER II

ECONOMICS: DISCIPLINE, STRUCTURE, SEQUENCE, AND PEDAGOGY

The principal investigators and the research associates agreed from the start that the project would be based upon the structure of economics previously developed by the economist on the project (Meno Lovenstein). The project adopted as its basic position paper a chapter written by Lovenstein in The Teaching of Elementary Economics, entitled "Economics, Educational Philosophy, and Psychology."[1] The publication included the papers and discussions of a conference of college and university teachers at the Merrill Center for Economics and was sponsored by Grinnell College under a grant from the Ford Foundation.

Since Lovenstein's paper was accepted as an integral part of the project, it is reproduced in its entirety as a part of this chapter. In the early months of the project, a number of meetings were addressed to the content and approach of the position paper. The summary of this chapter will consist of an analysis of the usefulness of Lovenstein's paper in the preparation of the materials. It will also express conclusions which the writer has reached concerning his concept of the structure

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[1]Meno Lovenstein, "Economics, Educational Philosophy, and Psychology," The Teaching of Elementary Economics, edited by Kenyon A. Knopf and James H. Strauss (New York: Holt, Rinehart and Winston, 1960), pp. 137-166.

of economics, as modified by his experience on the project and by other related experiences. A word of caution about a possible confusion may be helpful. The experimental course referred to in the position paper described an earlier effort and should not be confused with the materials prepared in this project.

Economics, Educational Philosophy, and Psychology

Meno Lovenstein[2]

Economics and Education

The experiment in economic education at Ohio State University has been a continuing exploration of the relations between economic analysis, educational philosophy, and psychology. One result of the exploration has been an experimental course in the principles of economics which attempted a very conscious use of educational philosophy and psychology in the presentation of economic analysis.

It is astonishing how little professional attention teachers of economics have given to the art of teaching and to the intricacies of the educational process. It is true that in two official publications of the American Economic Association, The Teaching of Undergraduate Economics and Graduate Education in Economics, economists have publicly expressed

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[2]Permission to reproduce this chapter in this Report has been granted by the publisher.

their disturbance and uncertainties about education in economics.[1] Yet in neither volume is there the amount and quality of attention to educational philosophy and psychology which is necessary and which I have attempted.

In the study of graduate education in economics, there is a good summary--and lament--of the proliferation and "technicalization" of economics. The monograph does have a section on "Teacher Training," but the conclusion was that professors in graduate departments of economics are "overwhelmingly unsympathetic to the idea that the Ph.D. program should be modified substantially in the direction of greater attention to teacher training." Heads of undergraduate economics departments were more sympathetic.[2]

Howard R. Bowen, who wrote the study, states that "we know little, systematically, about pedagogy in economics at the college level . . . we are vague about the objectives of college courses in economics. We have little reliable information about content, methods of instruction, or personal qualities of teachers as related to the attainment of whatever objectives may be decided upon."[3]

Why is it that teaching economists have not given the same value and respect to the teaching part of their task as they have to the economic content? Part of the explanation no doubt lies in the supposed conflict between research and teaching, with teaching assumed to be a

[1]Taylor, Horace, The Teaching of Undergraduate Economics, Supp. American Economic Review, December 1950; Bowen, Howard R., Graduate Education in Economics, Supp. American Economic Review, Sept. 1953.

[2]Bowen, p. 164.

[3]Ibid., p. 167.

by-product. In addition, many economists have been caught up in the debate about the quality of the schools, which in popular discussions usually means the influence of the colleges of education and, particularly, of John Dewey. Indeed, this writer in pursuing his interest in educational philosophy and psychology has often encountered among his fellow economists the suspicion that he has been contaminated by contact or, worse, has been guilty of a kind of disciplinary treason to the sovereign state of economics.

Many teaching economists who want to improve their teaching still believe that they can "pick up what they need to know" from their own experiences in the classroom. It is surprising that they should feel this way, for economists usually resent a claim by non-economists that they can pick up economics. Most teaching economists, it turns out, are anti-intellectual about a major part of their assignment.[4]

Sometimes economists exclaim, "Let the educators tell us in simple words what to do and we will do it." They forget that education, like economics, does not consist merely of a list of definitions and proverbs but rather requires an absorption and conscious participation in a complex pattern of ideas, values, and analysis.

This writer can confirm from his own experience that whatever insights he has into a conscious use of educational philosophy and psychology came not alone from an interest in the subjects but from the chance to work with educators. His activities with the Joint Council on Economic Education introduced him to the problems of economic education at

[4] I owe this keen observation to Mrs. Willard L. Thorp who made the point at the Grinnell College Conference for which this paper was originally written.

the secondary level. He actually gave a course in economics in a high school.[5] In addition, he has just completed a study, summarizing two years of research, entitled Economics and the Educational Administrator.[6] Such experiences are cited only to support the view that one must work with intent and consciousness in a field really to comprehend it.[7] This bit of wisdom, seemingly obvious, is needed by professionals who must often struggle to feel and grant to other disciplines the sense of familiarity and authenticity they have about their own.

The point has been raised whether, in relating educational philosophy and psychology to economic analysis, one is not merely employing a rationalization for what economists already are doing. To an extent any teaching or analysis necessarily makes use of philosophy and psychology, and by intuition a gifted person may make a considerable use of them. But, again, it is a question of the quality and degree of employment which can be achieved by a more conscious and insightful application.

[5]Lovenstein, Meno, "What a College Professor Learned from Teaching in a Secondary School," Iowa Business Digest, Winter, 1957. Special Issue on Economic Education: "The Professor Goes to High School," NEA Journal, Dec. 1957.

[6]College of Education, Ohio State University, Columbus, 1958.

[7]Some of the writer's experiences include the following:

a. An exploratory study of a child's view of economics to deepen appreciation of the ability of kindergarten and elementary school students to begin to acquire basic economic concepts.
b. Consultation with the Akron Public School System in the revision of social studies curricula in the ninth and twelfth grades.
c. Interdisciplinary graduate seminars held with the College of Education, Ohio State University: (1) seminars with graduate students in the teaching of the social studies; (2) seminars with graduate students in educational administration.

Perhaps part of the suspicion about method in education is associated with the doubts that exist in general about methodology. It is rather the exception when economics is dealt with in philosophic terms. Even within the discipline of economics, questions of methodology seem to revive mainly when the subject itself appears lost.

Economists, it must be admitted, are not philosophical. If they were, words like content and method, even when confined to the discipline, would not be as distinct as many believe them to be. The use and selection of models and the shifting emphasis between micro and macro illustrate how vague the distinction between content and method can become. Likewise it can be shown that it is not meaningful to assign the word content to economics and method to education as though they were absolutely separable.

These prefatory words about economics and education are not intended to defend the particular use which this writer has made of educational philosophy and psychology but to suggest how important it is for economists to be open-minded about the value of these disciplines and aware of the attitude which may hinder their fullest use.

Economics: Content and Method

Before the relations of educational philosophy and psychology to economics can be considered, it is necessary to decide what is the subject of economics which one seeks to communicate. A serious concern about economic education must revive and focus upon the problem of scope and method. But, even more, it is essential to be sharply aware of the state of the discipline itself--the precise nature of its incompleteness and the specific points of confusion and contradiction.

There are two sources of confusion and incompleteness which make the communication of economics difficult. One lies in the analysis itself; the second lies in the presentation of economics. It is not well enough recognized how intricately the two are related. Indeed, a clear recognition of the relationships between the two fundamental blockages is essential to formulating a principles course which attempts to present the analysis in terms of the state of the analysis.*

Once the relation between the state of the analysis and its presentation is fully appreciated, content and method are seen to be closely related, if not synonymous. Thus, the macro analysis is a method but likewise it is content. By extension, macro analysis as a method of reasoning is intricately related to the demonstration of the nature and necessity of that approach. The educational process, in a word, must be correlated with the analytical process.†

Now where can one turn for a summary of the state of economic analysis and its presentation except to the textbooks and, for our purposes, the principles texts? No critique summarizing the texts can do equal justice to all of them, but certain common features can be described. Certainly we must look at the great array of textbooks and not alone at the best-sellers or at those which modestly proclaim themselves to be "modern" surveys.[8]

*When fully understood, the principles course is but a special phase of the relation of economic analysis and policy.

†In fact, if both are given wider meanings, it can be argued that they are the same process.

[8]Since teaching economists are familiar with principles texts, references will not be made to the treatment in various texts.

Each text announces in a preface its own goals and objectives. These vary, of course, but for purposes of this paper textbooks are submitted to a critique in terms of content and method, stressing three elements which, it will be argued, are of major importance in the presentation of economic analysis: (a) the nature of economic reasoning; (b) the organization of concepts; and (c) emphasis. These three areas are the ones where educational philosophy and psychology can be most helpful. Finally, they are the basis for the experimental course in the principles at Ohio State University.

Nearly all texts comment briefly on methods in economics. Bach's Economics has a chapter entitled "Straight Thinking in Economics." Robinson, Morton, and Calderwood called their brief survey An Introduction to Economic Reasoning. Yet it is highly questionable that comments on method mean very much unless the entire text makes a conscious, methodical, and continuous demonstration of the reasoning process. Moreover, the use of logic depends on the conception one has of logic. One may, for example, state that scarcity exists and then make certain deductions. In doing so, a good but minimum employment of logic has taken place. But the logic is buried in the concept, and its implications are not proved but declared. The reasoning is not exposed and the process of reasoning has not been exercised. Workbooks do not necessarily train the students in the process of reasoning; they may only emphasize the recognition of symbols and a degree of manipulation.

The fuller use of logic would mean a demonstration of the nature and the necessity of the concepts themselves. The reasoning process would induce an unfolding of meanings, each one compelling in turn a

progressive inquiry. Thus scarcity would not be a basic definition but the result of a series of inquiries becoming continuously more definite. The student would be led to a rediscovery.

The beginning of inquiry may originate in an experience, but the importance for analysis and pedagogy is that the exploration itself should become an experience. The primary motivation, as shall be frequently argued in this paper, should come from orientation and the ability to share in the inquiry. In such a process, moreover, the student, being involved in reasoning which he can follow, accepts abstraction without being intimidated. Finally, the relation of analysis to policy is made clearer to the student because he has already been made conscious of reasoning by exfoliation. Every new dimension has been an extension. The consideration of vested interests, conflicts, and values can be incorporated into the reasoning and not made to appear as irrational contradictions of assumptions and models. Quite often the economist speaks of his concepts as "tools," and seeks to show how specific tools can be used. But elasticity, marginal rates, and the like are not specialized hardware; they are inherent and integrated elements in the reasoning process.

These few comments, it is hoped, are enough to indicate that in the textbooks, and hence probably in the classroom, there is talk about reasoning, description of good reasoning, even use of good reasoning, but in the presentation of the analysis the student is not involved in a continuous and clear demonstration of the reasoning process. As a corrective, pragmatism and the nature of inquiry can be most helpful.

Economic concepts must not only be "discovered"; they must also be organized. The organization of the concepts can itself be a vital part of the conceptualization of the discipline, a stimulant to effective reasoning and an essential element in the retention of analysis.

Perhaps the source of greatest confusion is the use of the four economic processes (production, exchange, distribution, and consumption) as the skeleton for the presentation of economics. The division is either used explicitly or is the covert design for the presentation. Even with the varying emphasis placed on national income analysis, the practiced eye can still see the classic pattern at work, especially for the coverage of micro-economics.

Yet this fourfold division is almost meaningless as an organization for economic concepts and equally bad as pedagogy. Under the expressed or implied grouping of production are covered the laws of production, legal forms of organization, monopoly problems, and anti-trust legislation. Frames of reference constantly shift, and topics are introduced before backgrounds for interpretation have been acquired by the student. Hardly comprehending the first agglomeration, the student is asked to consider another--exchange. Before he knows the need for the analysis he finds himself in the midst of supply and demand curves and market structure. Supposedly, in understanding the formation of prices, he will also--but how?--understand the role of prices and the price mechanism. He is told about imperfections and monopolistic elements, but most of these are better illustrated from factor markets, which come later under distribution.

Usually exchange is explained by illustrations drawn from consumer markets; yet this is the one market where the dynamics of prices and their roles are least obvious from the student's own experience. Moreover, the process of exchange, which comes close to summarizing the capitalist system and is by its nature a complex of abstractions, is for most students made even more difficult by the use of "curves." The idea of the market is lost in the effort at rigorous demonstration.

One need hardly comment on the state of distribution theory, but it is questionable that economists fully realize the impression they leave with their explanations. The hodge-podge of qualifications haunted by the ghost of marginalism leaves most students as bewildered as the teachers--or is that the intent? As for consumption, we know that it has remained a residual claimant. In so far as it is an interdisciplinary issue, the texts fail to make that clear. Assumed to be a process, it is more often a synonym for policy. In both the distribution and consumption processes there is confusion and incompleteness, but the results would be less objectionable and more educational if the demonstration of economic reasoning had prepared the student to be specific about confusion and incompleteness.

Anyhow, do these four divisions represent the organizing concepts which professional economists are actually using? The ordering concepts of practicing economists are scarcity, stability, growth, flow, and coordination. Sometimes in the texts these categories are imposed on the old divisions. But most often the student must gather that there are two orders of organization--the conventional one which economists use when writing textbooks and the other which they employ themselves at the

professional level. Indeed, graduate work in economics might be defined as the gradual substitution of the new organization for the one in the principles course. It may be the reason why principles courses are clear to the instructor--he is using contemporary insights to teach the old divisions. He sees the light but the student does not.

Some texts have chosen to organize concepts under such terms as growth, stability, justice, and the like. Something can be said for such groupings, for they do incorporate into the organization the suggested usefulness of economics. However, such topics mingle analysis and policy, sometimes after a preface expressing a pious disavowal of suggesting policy and sometimes with a witticism uttered from a position of prestige. A major criticism of using a topical arrangement under headings such as growth or stability is that it is then necessary to draw out and reorganize the analysis which has been dispersed through these new groupings.

In both the old fourfold division and in the various new orders of presentation certain topics have been awkwardly introduced. Money is seldom an embarrassment, except to economists, and only when they teach it. They never seem to be sure where to put it. Quite often it is introduced as a part of exchange. Aside from adding yet another confusion to exchange, the implication is that money is neutral. On the other hand, if money and banking are treated as part of income determination, it is difficult for the student to see the allocation of funds by the price system. The emphasis, moreover, is usually on commercial banks. While understandable, the practice distorts the significance of "other financial institutions," the relation of banking to business and public finance, and the whole notion of the flow-of-funds.

International trade, which should be a binding force, exists in the texts in virtual isolation. It is not presented as a special case of value theory and as an extension of the flow of goods and services and of income. Instead its specialized terminology obscures the basic similarities to domestic trade. Moreover, by failing to integrate international trade into the general presentation, texts emphasize the provincial orientation already overwhelmingly present in the principles course. Even the balance of payments orientation expresses a mercantilistic approach. Perhaps it is a revealing indication of the confusion about international economics that growth or development economics often has been brought under the rubric of international trade. A knowledge of the gold mechanism is hardly an adequate introduction to India.

In summary, it must be obvious that the conventional ordering of concepts and the newer patterns are both inadequate. Much attention needs to be given to the intellectual and psychological factors involved in the organization of a body of thought. Educational philosophy and gestalt psychology have important contributions to make.

The third major element in the presentation of economics is emphasis. It is obvious that emphasis implies selection, but it is not obvious what are the determinants of the selection. Although teaching economists are constantly modifying their emphases, in my view they do not seem to be formally aware of the extent that educational values determine their choices. Questions arise about the extent of rigor to be used in the demonstration of price formation or in the explanation of elasticity, yet in all of these instances such educational criteria as the capacity of students, the lasting quality of rigorous analysis, and

even the worth of such precision in their unprofessional lives dictate the nature and quality of emphasis. Mainly these choices are personal and seemingly arbitrary. Yet it can be shown that educational philosophy and psychology can be enormously helpful in establishing criteria for selection.

If economists were to become more aware of the nature of selection and emphasis, the narration of economic analysis would be more consistent and integrated. One may cite a significant list of unintegrated and piecemeal selections. First there are the confusions and fuzzy relations between macro- and micro-economics. The relationships are not perfectly understood, yet they have been introduced into the principles course to provide a kind of twice-told coverage. The Economic Report, the basic economic document addressed to the public, is almost entirely a matter of macro-economics, yet most principles courses, even when there is a major treatment of national income analysis, are still fundamentally micro-economic.

One may cite, as a prime example of the use of selection without continuity, the rigorous introduction of price formation in consumer markets under the process of exchange and the virtual abandonment of the "curves" in distribution theory. Perhaps nothing is more confusing to students in the first place than the introduction of the curves, but after struggling through them they find that they are rarely used to explain prices in factor markets. One student observed about the traditional presentation that in economics one learns something in the first semester (production and exchange) which one is told to forget in the second semester (distribution, consumption, policy).

Moreover, the price theory introduced into the principles course does not reflect the nature of such theory in advanced analysis. Perhaps the most notorious example is the pious presentation of the bell-shaped curve and its implications. Flat-bottom curves are seldom drawn, and surely the treatment in conventional texts would be fundamentally modified if such curves were regarded as the model ones. All in all, the presentation results in a fraudulent impression of certainty about price formation.

The elaborate use of marginal analysis is presented as a rational explanation of behavior (demand, allocation of resources) and then discounted, if not nullified, by a complicated analysis of imperfections and monopolistic elements, yet without making it clear how little of the marginal explanations are then left. A bias, tantamount to a value judgment, results from the implied standard provided by marginalism. Finally, it is seldom honestly shown how uncertain are the foundations of marginalism nor the esentially instrumental nature of the use of it.

One of the most flagrant, even if one of the least avoidable, distortions arising from unexamined emphasis and selection is the confusion of economic principles with capitalist institutions. Texts often pride themselves on a subtitle--Economics: Principles and Institutions. The fashion now is to call the text The American Economy or something similar which compounds the loose association and basic confusion of "theory" and "institutions" by making institutions an adjective. There might be an analogy in economics to the use of substantive and adjective in the law, but institutions are not really regarded in economics as adjectives. Some fundamental disorder arises; for example, the

definition of pure and perfect competition, which is a mixture of principles (adjustability) and institutions (competition). Another distortion is the typical hazy intermingling of monopoly with scale of enterprise. Finally, by not being aware of this basic confusion of mixing principles and institutions, opportunity is missed to demonstrate the system as coordination and also to provide a clearer basis for comparative economics.

Lack of awareness about the educational significance of emphasis also affects the tone of presentation and very likely the value judgments offered in various degrees of consciousness. Even though it is fashionable to state early in a principles text that demarcations exist between analysis and policy, the manner of exposition, the declarative statement, the textbook authoritarian tone about fact and theory leave the impression that unquestioned fact and theory do exist.

Greater attention to educational philosophy and psychology could help to minimize the effects of such discontinuities and distortions. When they do occur, additional educational value could be derived from being specific about their existence. Educational theory cannot bridge the gaps in economic analysis, but by showing the value of being conscious about gaps, it can improve the quality of economic reasoning. In addition, much help can be obtained from the notion of "the logic of the subject," and from the concept of rhythmic education, both of which will be discussed in the next section.

Guides from Educational Philosophy and Psychology

We are now ready to consider the guides which educational philosophy and psychology can contribute to the presentation of economic

analysis. Economists can be helped with a theory of learning, with a deeper understanding of the nature of a problem, with the gain to be had from rhythmic education, and with a more sophisticated analysis of the structure of a body of ideas. Economists can learn to be more insightful about the nature and use of experience and the educational complications of dealing in the abstractions they must use.

But in turning to educational philosophy and psychology, the warning needs to be repeated that one should not expect formulae and prescriptions. As with economics, one must participate fully and professionally in the analysis before the insights can be acquired. Many economists will have read "something" of Dewey or Whitehead or may even as students have been in their classes. But it is one thing to grant the notions of other disciplines equal status with the concepts of one's own subject, and quite another to give all ideas wherever they may be housed equal professional understanding and use with the treasured ideas and values regarded as one's very own. Recognition of philosophy and psychology inside one's thinking is not the same as neighborly conversation with them over a fence.

But having admitted philosophy and psychology to professional status, in terms of one's own discipline, the question is, which philosophies shall be chosen and which psychology shall be used? A choice is obviously necessary, for there are fundamental differences which could in turn lead to very different integrations. A philosophy which asserts that eternal principles or ideas exist could serve as a basis for faith that eternal economic ideas can be detected or demonstrated. A pragmatic philosophy, as shall be shown, supports quite another view. In the

choice of psychology, a stimulus-response explanation of learning can imply that relationships well-learned in a piecemeal fashion will result in comprehensive insight and integration.

A choice must then be made among the philosophies and psychologies. In accepting the possibility of choice, however, one is already involved in a philosophy. The pragmatically-minded will likely choose a pragmatic viewpoint. The danger is present that one's conclusions are being confirmed by rationalization. But there are non-personal standards which can be used.

First, if a philosophy is chosen, one must have a sophisticated understanding of its implications. Thus, if pragmatism is selected, it should not be regarded as a crude synonym for experience or for trial and error. On the other hand, one need not adopt totally such a philosophy. The knowledge of its limitations should prevent a complete acceptance.

Second, certain philosophies do represent the consensus of conceptualization and evaluation of a broad period of thought. Dewey or Whitehead, or indeed any other philosopher, cannot be said to express all aspects of modern philosophy, but they do respond to the tenor and query of the times and they do have close affinities with most of modern philosophical movements.

Third, certain philosophies and psychologies have come to have wide acceptance and prestige in particular areas. There can be little doubt about the influence of the educational writings of Dewey and Whitehead. Since this is so, using them does at least provide a commons for discourse.

These are some of the reasons determining my choice of Dewey and Whitehead as educational philosophers and gestalt psychology as the basis for learning. My use of them is selective and eclectic, and consequently my applications are open to all of the cautions and criticisms offered in the previous discussion of selection and emphasis.

The contributions which educational philosophy and psychology can make will be considered in a threefold division corresponding with the schemata used in the critique of the state of economic analysis and presentation. The nature of economic reasoning will be assisted by guides from the concepts of pragmatism and the nature of inquiry; the organization of concepts by contributions of logic and gestalt psychology in the grouping of ideas; emphasis by the notion of the logic of the subject and rhythmic education. It will be argued, moreover, that all of the contributions drawn from educational philosophy and psychology constitute an integrated approach, each phase being necessarily related to the other.

What help can economists obtain from pragmatism and the nature of inquiry in their effort to teach economic reasoning? We will turn to Dewey first, for he has made two basic contributions to economic education--his conceptions of learning and of the meaning of problem. We will be concerned with Dewey the logician, and only incidentally with him as a social philosopher. Our focus will be upon his Essays in Experimental Logic, upon his Logic, The Theory of Inquiry and on the logician's part of How We Think.[9]

[9]It is commonly recognized that many educational practices and interpretations are distortions of Dewey's thought. In Experience and Education, written late in his life, he sought himself to correct some of these misunderstandings. Many of the misinterpretations arose because attention was paid to the social philosopher to the neglect of

First we must understand what Dewey means by the nature of inquiry. He emphasized the close relation, if not identity, between common sense and scientific inquiry. For him the process of inquiry involved in the extension of knowledge is much the same, in content and procedure, as the learning of that knowledge by students. Learning in the laboratory is quite similar to learning in the classroom.[10]

The notion of unfolding exploration is a basic principle in Dewey--and in pragmatism. It is called the principle of the continuum of inquiry, meaning, as Dewey states it, that "the conclusions reached in one inquiry become means, material and procedural, of carrying on further inquiries."[11] Dewey then contends--and I think consistently--that "the problem that then arises with reference to the relation of subject-matter to form seems to me insoluble except on the ground of continuity of inquiry."[12]

From this line of reasoning a most important lesson can be drawn for teaching economic reasoning, and was of very great influence in the construction of the experimental course at Ohio State University: namely, that in the order and manner of presentation of economic ideas, the

Dewey's philosophical position and the significance of his logic. Yet it is the logic of inquiry which can provide a basis for economic education by showing that content and method are not separable. Economic analysis and pedagogy can be unified without loss to either; indeed, with mutual gain. It may well turn out that the logician in Dewey has more to offer democracy than the social philosopher.

[10]Dewey, John, Logic: The Theory of Inquiry, Holt, Rinehart and Winston, New York, 1938, p. 66.

[11]Ibid., p. 140.

[12]Ibid., p. 469.

student should be involved in rediscovery in much the same way and with the same framework which is being used to extend economic knowledge. For example, the students inquiry into the concept of personal savings simulates the professional's inquiry about the concept itself.

The notion of problem and problem-solving is associated with Dewey and is closely allied with his ideas about learning. Perhaps no term has been used more freely and uncritically in education than <u>problems</u>. Economists also use the term without being sure of its meaning.

The word <u>problem</u>, at least in its psychological aspect, seems almost a synonym for a crisis or predicament which the individual faces. He must try to solve it. As Dewey sees it, "The nature of the problem fixes the end of thought, and the end controls the process of thinking."[13] But it is often forgotten that Dewey adds much later, "We know what the problem <u>exactly</u> is simultaneously with finding a way out and getting it resolved."[14] Thus the idea of a problem must be understood not just as a crisis or even a solution but as a series in the process of inquiry. "The determining of a genuine problem," says Dewey, "is a <u>progressive</u> inquiry."[15] It represents a progress from a sensed difficulty or conflict through a series of if-then relationships (means and consequences) until a solution is reached.

Understood in the sense that Dewey intended, we are not using the term correctly when we speak of labor problems or the farm problem. In such cases we are usually involved in a description of the factors which

[13]Dewey, John, <u>How We Think</u>, Heath, Boston, 1933, p. 15.

[14]<u>Ibid</u>., p. 108.

[15]Dewey, <u>Logic</u>, p. 108.

seem to be present in a situation, not in a process of problem-solving. Likewise, it is not a problem when we speak of the problem of the distribution of income or of the transfer problem. Nor is the so-called Economic Problem, in the Dewey sense, a problem, for it is stated as a conclusion and is not presented as a part of the process involved in reaching a conclusion. But it is possible to sense the existence of scarcity, of the flow of goods and services and income, and of coordination, and so to become engaged in a "progressive inquiry." In a word, the problem consists of continuous inquiry into basic economic situations; that is to say, economic analysis is itself the problem.

Dewey's view of thinking as a continuing process has, of course, direct application to education (including economic education). In Experience and Education, he gives a prescription with regard to the use of ideas which goes to the very center of economic reasoning:

> He (the educator) must constantly regard what is already won not as fixed possessions but as an agency and instrumentality for opening new fields which make new demands upon existing powers of observation and of intelligent use of memory. Connectedness in growth must be his constant watchword.[16]

Once Dewey's meaning is fully appreciated, one can find many direct applications for the presentation of economic analysis in such a way as to arouse and maintain the process of reasoning. First of all, there must be an effort to sense and reach for a concept, say, scarcity. Then inquiry will extend its dimensions and step by step, always step by step, the students will explore the ramifications of the emerging notion.

[16]Dewey, John, Experience and Education, Macmillan, New York, 1957, p. 90.

Since inquiry is commonsensical, the commonsensical quality of first inquiry must not be overwhelmed. The text or the instructor must not rush in with an elaborate declaration of all the meaning which can be drawn. One should not, as is so often done in textbooks, as soon as the student's interest in the concept of scarcity is aroused, drown him in a tidal wave in the form of a one-chapter summary of what economics is all about.

If the educational significance of inquiry is understood and respected, the students will become interested in scarcity as a problem and will not need to have the problem dramatized by focusing on an illustration of scarcity. Scarcity itself will be the problem and economic analysis itself will be the problem. After all, what we want is to get them interested in the analysis directly! An appreciation of inquiry makes that possible.

Many teaching economists will contend that they already use the process of inquiry without calling it that. That may be so, but more likely they have mistaken the formal explanation for the logic of inquiry and the declaration of relationships for the rediscovery of them.

We may now consider the assistance which educational philosophy and psychology can give to the organization of economic concepts. Is it possible to have guides in determining the logic of a discipline? Bertrand Russell, in Human Knowledge, particularly in the section on "Postulates of Scientific Inference," states five postulates. Each of them could serve as a basis for examining not only the logic of economic

analysis but especially the presentation of economic principles. They are:

(1) The postulate of quasi-permanence.

(2) The postulate of separable casual lines.

(3) The postulate of spatio-temporal continuity in casual lines.

(4) The postulate of the common casual origin of similar structures ranged about a center, or, more simply, the structural postulate.

(5) The postulate of analogy.[17]

The fourth and fifth postulates are significant for our immediate purposes. The notion of occurrences grouped about a center is closely related to the concept of gestalt and offers a guide to the structural considerations in ordering, and reordering, economic ideas. The postulate is also helpful when considering the word content. We need to ask ourselves if we do have in economics similar structures, that is, concepts, principles, and institutions, which range about a center. No automatic rule is given for the choice of the center, but an awareness is created by a recognition that there must be a center.

Whitehead, in Adventures of Ideas, also treats the same problem in what he calls "The Grouping of Occasions." He makes the stimulating suggestion of regarding the grouping as a "society," in which the class-name "has got to apply to each member, by reason of genetic derivation from other members of that same society" (italics mine).[18] As abstract as this may sound, it does nonetheless provide economists with a lead in

[17]Russell, Bertrand, Human Knowledge, Simon & Schuster, New York, 1948, p. 487.

[18]Whitehead, Alfred North, Adventures of Ideas, Mentor, New York, p. 205.

their effort to organize economic concepts, namely, we must ask if one concept is genetically related to the other with which it is grouped. Will production, growth, or stability, for examples, stand this test? Or can there be others--perhaps the ones described later in the experimental course at Ohio State University?

The fifth postulate of Russell's concerns analogy. In economic analysis and in its presentation, economists have not usually been aware of the subtleties and often necessities of fictions and analogies. Economic models quite often rest upon--and quite often fall because of--the uneasy and deceptive nature of analogies. Yet notions of dymanics, the price mechanism, the flow of income, and the like have become postulates in the discipline.

The use of analogies can obviously be both useful and misleading in economic analysis and in the presentation of the analysis; the teacher must be as much aware of the implications of the analogy as such as he is about the economics expressed in the analogy. Yet once the uses and limitations of analogies, metaphors, and fictions are appreciated, they can further both analysis and education. They facilitate the drawing of inferences. Morris R. Cohen, in his A Preface to Logic, has a chapter on "The Logic of Fiction," in which he states that "the realm of valid logical inference is, therefore, wider than the realm of factual existence."[19]

An analogy usually consists of reference to a common experience, so by extension the economist must consider the role of experience in the presentation of analysis. Dewey recognized the "need for a theory of

[19]Cohen, Morris R., A Preface to Logic, Holt, Rinehart and Winston, New York, 1944, p. 82.

experience," and cautioned repeatedly against the naive use of experience in education.[20] For the economist, the recognition of significant experience as a basis for the organization of concepts is especially challenging, for he is called upon both in his analysis and in his presentation to be mindful and sophisticated in his choice.

While postulates of structure, analogy, and experience are essential to the organization of concepts, we must still inquire about the nature and possibility of a system which can organize these concepts. Surprisingly little literature exists on the notion of a system. Economists pride themselves on making a systematic analysis, but it is not clear what kind of system they have in mind. It appears that they are speaking primarily of an economic system--itself not defined--which supposedly serves to order their analysis and to compose the presentation of principles. But a system of analysis is not the same as an economic system. Morris R. Cohen, in An Introduction to Logic and Scientific Method, does discuss the nature of a system and he states:

> The ideal of system requires that the propositions asserted to be true should be connected without the introduction of further propositions for which the evidence is small or non-existent.[21]

Again no simple definition of system can be put into the hands of economists, but they can be made aware that the stringing of concepts along a line of least resistance--for example, old categories or new--does not mean systematic treatment either for analysis or for teaching.

Now, the guides for the organization of concepts have until now been drawn from educational philosophy. Yet structure, analogy, and

[20] Dewey, Experience and Education, p. 13.

[21] Cohen, Morris R. and Nagel, Ernest, An Introduction to Logic and Scientific Method, Holt, Rinehart and Winston, New York, 1934, p. 395.

experience are also psychological, and they can be shown to be closely related to gestalt psychology. The characteristics of gestalt psychology are, I assume, familiar--the emphasis on wholeness, the insight into pattern, and so on. The concept of dealing in the whole, of seeing a design or pattern, makes it possible, through gestalt psychology, to seek out the structural elements, the analogies, and the experiences which can provide an organization of ideas.

A good grouping or category of concepts in economics, according to the guiding principle of the law of prägnanz, should be "knapp, und doch vielsagend (compact but significant)."[22] In other words, economists should include their concepts in groupings which have the quality of providing insight into a number of implied relationships. The notion of diminishing returns is an example, but the idea ought to be more inclusive and central in the analysis. In the experimental course, this writer chose scarcity, flows, and systems.

Gestalt psychology recognizes four laws of organization--similarity, proximity, closure, and the good continuation. The last two can prove especially helpful in organizing economic concepts. The law of closure states that an activity seeks an end-situation; that is to say, there is expectation that a pattern will be recognized and that this expectation and result should be taken into account. For the organization of economic concepts, the law of closure indicates that the concepts should be so arranged and treated that there are strategic end-situations or points of integration where the student will be rewarded with a recognition of pattern or form. It should not be expected that he would "see"

[22]Hilgard, Ernest R., Theories of Learning, Appleton-Century-Crofts, New York, 1948, p. 182.

economics but that he would be motivated to that end by recognizing wholes within the analysis. An example would be a recognition of scarcity and economic decisions forming a thinkable unit.

The law of good continuation implies, for example, that a straight line will continue as a straight line. Economists may ask themselves what good continuations or themes run through economic analysis so that the student will recognize the good continuations and even project them (and note the close relation to economic reasoning when he does). Economics does have such lines of good continuation. For example, the two types of goods (producer and consumer) and the two matching streams of income (savings, that is, invevestment, and spending) run through the entire analysis. Likewise, the theme of the four buyers (consumers, business, foreigners, and government). The contribution of gestalt psychology is to heighten consciousness with regard to the importance of good continuation.

It is apparent that educational philosophy and psychology can make many helpful contributions to the organization of economic concepts. We must inquire, finally, what aid they can give in the matter of emphasis and selection.

Again we may turn to Dewey, for he not only explored the general nature of inquiry, he also recognized the nature of inquiry within a particular discipline. He argued that "logical forms accrue to subject-matter when the latter is subjected to inquiry."[23] That is to say, a logic pertinent to the subject emerges in the processes of inquiry.

[23]Dewey, Logic, p. 101.

Dewey makes it quite clear that there are "distinctive standard concepts established for each discipline."

Now, if economics as a discipline has a logic of its own, it follows that the presentation should be made in some meaningful and testable order. Moreover, if such a particular logic exists for the subject, it should be possible to relate the major concepts in the logical order without impairing its continuity and consistency. Emphasis and selection then should be made with a view to the logic of the subject. In the experimental course the major concepts of scarcity, flows, and systems are accepted to be the components, and in that order, of the logic of economics.

Whitehead does not attempt to relate the demands of logic and pedagogy in helping to define the content of a subject, but he does give some meaningful prescriptions for the selection of basic concepts:

> The best education is to be found in gaining the utmost information from the simplest apparatus.
>
> Keep the theoretical exposition short and simple, but let it be strict and rigid so far as it goes.
>
> Every proposition not absolutely necessary to exhibit the main connection of ideas should be cut out, but the great fundamental ideas should be all there.
>
> Let the main ideas which are introduced be few and important, and let them be thrown into every combination possible.[24]

In Science and the Modern World, Whitehead contends that each object has "its mode of ingression" into every other object. His phrase "relational essence" should prompt economists seeking to organize

[24]Whitehead, Alfred North, The Aims of Education, Mentor, New York, 1949, p. 29, 16, 22, 14.

economic concepts to view each of them in terms of its relational essence to other economic concepts.

These observations, helpful as they are, still do not provide a means of relating the grouping of concepts, assuming them to be particular for each subject, to the effective presentation of these units of analysis or gestalts. But Whitehead in The Aims of Education has offered a most stimulating suggestion for relating the thinking process to the educational. He calls his conception "The Rhythm of Education," which he defines as follows:

> The principle is merely this--that different subjects and modes of study should be undertaken by pupils at fitting times when they have reached the proper stage of mental development.[25]

He then gives the stages which he thinks are involved in rhythmic education:

> Lack of attention to the rhythm and character of mental growth is a main source of wooden futility in education. I think that Hegel was right when he analyzed progress into three stages, which he called Thesis, Antithesis, and Synthesis; though for the purpose of the application of his idea to educational theory I do not think that the names he gave are very happily suggestive. In relation to intellectual progress I would term them, the stage of romance, the stage of precision, and the stage of generalization.[26]

The concept of rhythm is conceived of as cyclic processes:

> Education should consist in a continual repetition of such cycles. Each lesson in its minor way should form an eddy cycle issuing in its own subordinate process. Longer periods should issue in definite attainments, which then form the starting-grounds for fresh cycles. We should banish the idea of a mythical, far-off end of education.[27]

[25] Ibid., p. 27

[26] Ibid., p. 29.

[27] Ibid., p. 31.

Whitehead applies the cyclic process to the introduction of the various phases of education. One begins with the stage of romance in one phase of education, say language, and moves on to the stage of precision. During the stage of precision for language, the student enters the stage of romance about science. Education becomes a pattern of overlapping sequences.

Whitehead's conception of rhythmic education can be modified so that during a principles course there would be the overlapping pattern of Whitehead's three stages. In the experimental course, having arrived at three gestalts, the first (scarcity) is carried from the stage of romance to the stage of precision, then the second (flows) is begun at the stage of romance and relies on the precision arrived at in the previous gestalt, and so on.

Whether a principles course follows Whitehead's suggestion or not, his conception of overlapping development can be of very great assistance. It provides insights and new dimensions to the task of emphasis and selection. In the experimental course it offered a meaningful way of relating micro- and macro-analysis and accumulating orientation for the final section on coordination. There are many other contributions which learning theory could make.

The Experimental Course in the Principles

The experimental course in the principles represents a deliberate and full use of educational philosophy and psychology addressed to three objectives: (a) the demonstration of economic reasoning; (b) the educationally meaningful grouping of economic concepts; (c) the use of the

logic of economics and rhythmic education as a basis for selection and emphasis. These are the same three categories employed in the critique of the state of economic analysis and also in the section on guides from educational philosophy and psychology.

Let us first consider the objective of demonstrating economic reasoning. The general orientation of the course is that of the logic of inquiry. It assumes a close relation, if not identity, between common sense and scientific inquiry, between man's original learning and the process of re-learning. Economic analysis is explored step by step as a process of discovery.

Continuous emphasis is placed on the linkage of each idea to the next. Not only is the linkage explained, but the fact and necessity of linkage is itself explained and emphasized. Moreover, the discussion of the idea leading to the linkage is shown to require a progressive inquiry, and the progressive inquiry is itself explained and underlined. The "relational essence" is sought in common sense, in analogy and with a mind to the gestalt of which it is a part.

As the concept, say, of scarcity emerges, it in itself becomes the problem and a fuller understanding of its nature and implications becomes the problem-solving. Thus the student is directed at analysis itself. The students become interested because familiar experiences are now seen with new meanings. Because of the technique of conscious linkage and continuous review, student motivation arises from comfort and orientation, not merely from vicarious interest-catching illustrations.

The learning is, of course, directed but it is not declared and not dictated. The method may be discussion or lecture or both, but in

any case the important consideration is the conception of presentation. An instructor mindful of the logical-pedagogical nature of his approach will find modified his use of language and his emphasis on connectiveness and will sharpen and subtilize his insight into students' misunderstandings.

These comments on the method of training in economic reasoning will be more meaningful when the course is outlined below.

We next appraise the experimental course in terms of the educationally meaningful grouping of economic concepts. The "problem" which emerges during the process of inquiry will constitute three families of ideas: (a) scarcity (including economic decisions); (b) flows (of goods and services and of income); (c) and systems (coordination of decisions and flows). These three families of ideas are gestalts. They could be given different names and some economists might want to choose others, but these were chosen as approximating the qualities of good gestalts. It happens that these three gestalts are also those which are the working centers for professional economists.

The use of these gestalts enables the student also to keep in view the end-situation and be rewarded, thus, by seeing how each new dimension yields a fuller understanding of scarcity, flows, or systems. We are using the law of closure. Likewise, in following the gestalt psychology there is a very conscious use of the good continuation. Themes which run through economic analysis are specifically emphasized--choice, adjustability, producer and consumer goods, four buyers, and so on. The dwelling on continuity is also an enormous stimulant to economic reasoning. Moreover, since the gestalts have familiar connotations, the

grouping tends to facilitate reasoning and improve retention. Finally, under these groups it has been possible to integrate money and banking, international trade, the role of government, and comparative economic systems more effectively because the order of presentation made places for them.

Our third objective was the use of the logic of economics and rhythmic education as a basis for selection and emphasis. The three families of ideas, or gestalts, are arranged according to the principle of the logic of the subject. First we must accept that scarcity, flows, and systems are the essential components of the discipline. We are then free to inquire if the logic of the subject also suggests an order in which these should be taken up. The correctness of considering scarcity first, then flows, and finally systems depends upon an appreciation of the topics included under each gestalt; these details will be given in the outline to follow. There is a kind of immediate common sense in discussing scarcity first, though it could be argued that flows might be considered first and then scarcity. But this debate does not deny that economics has a logic of its own; it merely suggests that there are choices in the ordering of content.

Having chosen to begin with scarcity, the analysis is introduced at the stage of romance and carried to the stage of precision. The outline below will indicate what these applications mean. Then the second family of ideas, flows, is introduced at the stage of romance, and is helped by the first family of ideas, scarcity, now at the stage of precision. The third family is introduced at the stage of romance, and the two previous families of ideas move to the stage of generalization as

the third family also arrives at precision and generalization. The cumulative effect of the generalization is to make the nature of the coordination meaningful not only in itself but in relation to a full realization of what scarcity and flows mean.

The objectives of the experimental course can be made more concrete by an outline, necessarily omitting details, but showing the topics considered and how they are presented.

The course opens with a review of the subjects which students have taken. Through inquiry they discover that these subjects are in fact problem-areas. They come to realize that there are problem-areas which have been touched upon very lightly, unknowingly, or not at all. By leadership in selective experience, they "discover" scarcity. It is the beginning of the first gestalt or family of ideas.

We then explore what the term really means, thus being led to understand what wants are, what satisfies them, what goods and services are made of, and what is meant by the factors of production. This seemingly familiar introduction is made personal by the nature of the exploration. Many economists, bored by the apparent simplicity of the notion, are tempted simply to declare it is so and move on. But they miss the chance to create the attitude of discovery about the already familiar.

Now faced with a situation of scarcity, what then? It becomes clear that decisions must be made. But note, the recognition of the need for decisions arises from common sense and not from the impression that decisions are peculiar to economics. Even as the discussion or lecture moves on to inquire as to the first decision--what to produce and in what order--common sense is paralleling scientific inquiry. Right at the

beginning comes the emphasis on the good continuations--choice, mechanisms for choice (the dollar vote and the ballot vote), producer and consumer goods. But these are not asserted as economic concepts. They are adduced from common sense. When next we come to consider that choices mean the allocation of resources, the link is established at the level of common sense. Even the good continuation of mobility of the factors of production providing adjustability can be drawn from "just thinking." The results are creative, not didactic. We are moved to the third commonsensical decision--how can scarce factors be made to go as far as possible?--and are surprised to discover that this assimilated piece of obvious wisdom has a name--efficiency. We then inquire about the sources of efficiency. But then, having created the goods and services, we are compelled to ask how it is divided. We are thus moved to our fourth decision--the distribution of the product or of income.

In discussing each of these decisions the students draw on their experiences. No effort is made to be precise about the market mechanisms nor the structure of markets. The entire introduction is allowed to develop out of exploration. Students are expected to read their text for helpful facts, but the spirit is one of recapitulated discovery, of reasoning about scarcity and its implications; in a word, they are engaged in economic reasoning at the most obvious and natural level.

The first gestalt has just been completed. Scarcity has been analyzed by regarding its unfolding meanings. The idea of scarcity has been carried to the point of precision but not to generalization. Next we <u>link</u> the whole gestalt to the next by showing that human activity is continuous until modified by decision. (Note: dynamics used as an

analogy but with special awareness which heightens its educational value.) We glimpse how each decision will in general (stage of romance) affect the flow of goods and services and the flow of income.

The familiar experience of continuous activity (employment) leads to the notion of flows. We begin with a simple circle of flows, then identify in the concept of flows the four economic processes, and finally see how the national income analysis amplifies the conception of flows. It is important to recognize here how the conception of flows has been brought along from the simplest commonsensical notion to the complex national income data.

Students on their own understand that the flow has size and so are inquisitive about causes of the change in magnitude. Then we examine the composition of the flows but only after inquiry has led us to speculate that the flows might have a composition which could help explain changes. Again the good continuation reappears, for we not only recognize two types of goods for four buyers, we recall also the problem of choices.

In our inquiries we come to realize that the flow of income is not a closed system. We have not only discovered the role of financial institutions (which we explore further) but have acquired a philosophical or methodological dimension--the closed system. Both the monetary and methodological elements are emphasized.

We are now surprised to realize that the flow is actually a chain of exchanges, so we begin to see more clearly the need for money. Then we are ready to ask about the kinds of money, the sorts of financial institutions, and the control of the money supply. Now all at once it

dawns on us that we have been considering the factors which can determine income. We naturally want to know more about what can influence incomes.

Now an interesting development occurs. It has become quite clear that economic activity is a flow involving payment. The gestalt makes it fairly easy to see international trade as a special case of flows and, because of differences in currency, a special case of payment.

Our second family of ideas has been carried to the stage of precision, aided by the precision arrived at in the first family of ideas. In each family of ideas, the completion of the gestalt satisfies the law of closure.

The students having reached the stage of precision about scarcity and flows are ready to infer the third gestalt, that is, coordination (systems). We link the first and second family of ideas to the third by coming to understand that we live under a number of systems: political, social, religious, and economic. We seek a common factor among them and find that each seeks to condition behavior for the attainment of certain goals. We can anticipate--because of the postulate of structure--that there must be such basic institutions for capitalism.

We are now prepared to explore the third family of ideas, systems. The basic institutions of capitalism have been either realized or suggested by the precision reached in the discussion of scarcity and flows. The students already know a good deal about producers and consumers, private property, markets, and competition. Next, then, we can consider markets, decisions, and flows, for which we have been made ready by understanding the relation of decisions to flows. We ask how markets

differ, how they are classified, and what effects each type of market will have on decisions and flows.

Before we can fully understand decisions, we must ask who is the organizing decision-maker, so we explore the entrepreneur (legal form, size, monopoly, and so on). Having done so, we are prepared to see the situation in which the decision is made, which means exploration into the meaning of supply and demand. Everybody knows already that these are related, but now they have the orientation to seek to understand how they are related and what the relation means. We study market prices with some interest now, seeking to discover how they are formed and their relation to decisions and flows. But we know that the market is made up of individual decision-makers, so we are motivated to look into the decision of the firm.

The instrumental view of price theory leads naturally into an investigation of other forces determining prices--business and government administered prices, collective bargaining, and the significance of the redistribution of income. Now we have the background to look at the prices for the factors of production not merely as special kinds of markets or even as primary determinants of income distribution. The gestalt of coordination has added new meaning to these prices, for they are seen as part of a system. There is a unity which is never satisfactorily provided alone by assuming a common role for marginalism offset by imperfections.

The role of government is a troublesome one to integrate into economic analysis, but the order and manner of presentation in this experimental course helps to make its position more meaningful. First of

all, since the problem approach has shown the social nature of decisions, flows, and coordination, government is not left in some isolated way to bear the burden of being "society." From the viewpoint of economic analysis, the gestalts of scarcity, flows, and systems make it easier for the students to see government's role as related to decisions and flows. An explanation of intervention is facilitated because it can be shown that government intervention is either in the machinery for decision-making or in the effects (flows).

We have already commented on the fact that focusing on basic problems (scarcity, flows, and coordination) makes it easier to find a place for comparative economics. Students are best helped to compare other systems if they are sufficiently oriented about their own. It is argued that, with the approach used in the experimental course, they have been. But more important, from the view of specific advantage in the presentation, they have been able to see scarcity and decision and flows as economic problems separable from the problem of coordination. They are to that extent less institution-blinded in their comparative economics, for they have been shown coordination as separably as possible in terms of capitalist coordination.

This summary fairly well reflects the content of the course as it is closely related to the method of presentation. The "big ideas" presented in an unfolding pattern and grouped into gestalts is exactly what the students themselves are able to reproduce. They can follow the story!

To help them learn how to arrive at a notion and explore its implications, they are required to write a full summary of the course, stating each notion and linking it to the next. We call their summaries

the Big Idea Book. As the course develops I write on the board each major concept and its implications. Then from the classroom notes and from their text and reading they compose their own summaries. But it is questionable that such a device would help unless the course had been devised with the guides afforded by educational philosophy and psychology.

A number of other educational values have been explored. The course has been offered both in one quarter and in two in order to determine whether the extent of time made any difference in the degree of comprehension. In the two-quarter course, all the educational data which the university had for each student was brought together. Each student had an elaborate interview, and in cooperation with the Counseling and Testing Service the students were submitted to a test on social attitudes and one designed to determine types of personality and their possible influence on the learning of economics. The data are still in the process of analysis.

The students in all of the experimental classes were merely those who were taking economics. The text had already been chosen and could not be modified. It was necessary to rearrange the chapters to follow the order of presentation, an arrangement which was far from satisfactory. A text written to follow the experimental order would have been tremendously more effective. I would have preferred that the students could have done an appreciable amount of extra reading; but as it turned out, their resources being only their own capacities and interests and an inadequate text, I was better able to explore the worth of the experimental approach.

In summary, the purpose of this paper is not to prove that educational philosophy and psychology combined to produce the perfect course in the principles. Rather it is my hope I have shown that with such help economic education can be vastly improved.

. . . . . .

Note by Meno Lovenstein. The motivation of students arises from being able to follow, step by step, how one economic notion leads to the next, in a continuous unfolding of analysis.

This conception of motivation rests, first of all, on an understanding and use of pragmatism, that is, that each idea arises from a fuller understanding of a previous notion, and in turn, compels the student to explore the further implications.

Emphasis, however, is placed not only on the linkage of ideas but on a constant review of the emerging pattern of ideas.

Attention to motivation arising from reasoning requires a meaningful re-ordering of economic concepts to facilitate the process. Therefore, much attention is given in the experiment to the order of learning. The re-ordering is determined both by the logic of economics (recognizing specifically the gaps and confusions which obscure the logic) and by educational values (specifically, learning theory).

In the re-ordering of economic concepts, much help can be obtained from gestalt psychology. (Gestalt psychology asserts that thinking takes place by recognizing forms and patterns.) The concept of gestalt helps to provide the basis for meaningful groupings of economic notions. In the experiment, the groupings of scarcity, flows, and systems help

the student not only to follow the linkage of individual notions but also the links between groupings.

Gestalt psychology also provides insight into the value of themes which run through economic analysis and thus provides unifying elements in the analysis.

In summary, the use of educational philosophy and psychology is to focus on an integrated survey of the principles while continuously emphasizing the nature and use of economic reasoning.

Postscript by Meno Lovenstein. Having been permitted to say so much, it appears an abuse of privilege to be allowed to say more. Yet there is need for further comment. It is my impression that those who prepared papers for the conference were not convinced that their points of view had been fully understood. The Digests of Discussion of the papers, although fair and accurate, nonetheless reflect the imperfect understanding and the biases which prevailed at the sessions.

During the conference a paper often was tagged with a code word, ostensibly to identify the position but in fact simplifying it unduly. The introductions to the papers are a great improvement over the loose designations used at the conference table, such as "the big problem approach" (Senesh), "the little problem approach" (Fuchs and Warner), or the epithet in my case, "educational theory."

Yet as scrupulously prepared as they are, the reports do not do justice to the various approaches. The fault lies mainly with the authors of the papers, for we have not probed deeply enough into the relations of our methods to our goals. The approaches appear to be

elaborate stratagems rather than profound analyses. The criticisms, in my view, were brightly superficial and not often constructive.

During this year I have re-read and steadily pondered the content of each of the papers. I conclude that we did not understand each other very well and, by implication, those who read these papers and discussions when published will probably be even more at a disadvantage. For in each of the presentations, more is assumed or implied than is actually made clear. The papers should be judged not alone by what is said but also by the assumptions about economic analysis, learning theory, or educational goals which have not been adequately emphasized or appraised.

For example, the term "problem-solving" was frequently used and quite naively. Is it but a description of complexity and conflict? Does the term imply that one can by some method of instruction provide an integration of the social sciences? Is "problem-solving" but a watery reflection of pragmatism (technically understood)?

After a thorough study of Senesh's paper, supported by years of most valuable association with him, I cannot conclude that his actual method is to <u>teach</u> economics through problem-solving, even though that is the title of his paper. Senesh has a goal, a very good one, perhaps the most commendable, but it is, as I see it, the suggestive demonstration that economics has a place in social analysis and policy. To do so, he must draw upon economic analysis, to some extent show economic reasoning. But he cannot teach economics, if by teaching it one means the presentation of a systematic, integrated explanation of economic behavior. If this is the real nature of Senesh's approach, it is not at once clear from the paper or the discussion.

Likewise, it is my impression that the so-called "case approach" of Fuchs and Warner was not presented nor received with the sophistication the concept of case requires. Fuchs and Warner comment briefly on traditional uses of the case method, but its use and contribution depend (1) on an analysis of the relation of cases to principles (or more analytically, on the relation of a set of events to the process of generalization), and (2) on the educational significance of the case method (is it a device for providing a general orientation or one that depends on a previous orientation?). The basic, potential contribution of Fuchs and Warner was not, in my view, fully explored by them nor appreciated by the group.

Similar comments could be made about each of the contributions--including my own! A deeper probing would reveal that each of the approaches is really concerned with profound problems touching the nature and state of economic analysis, the relation of analysis to policy, and the meaning and use of learning theory. Yet these areas were not explicitly and prominently treated; they were rather unexamined assumptions supporting particular approaches.

I have been greatly troubled by the theme of "economic reasoning" which runs through most of the papers and discussions. What do we mean by teaching or demonstrating economic reasoning? Whether by case, problem-solving, model-building, workshop, or what have you, are we simply pointing out the relationship of economic fact A to economic fact B, or social fact A to economic fact A? Does the involvement of the student change the essentially piecemeal and disjointed presentation of analysis?

But more important, is this piecemeal demonstration an end in itself? Is it a proper and sufficient goal for the introductory course? It may very well be that it is all that we should aim for or which can be accomplished. If so, the end product has values peculiar to the goal. Among them is the act of persuasion and conviction, albeit intellectual, that economics is reputable and useful. By implication, we are fashioning an attitude, not aiming for semiprofessional citizenship. We are pre-conditioning, not educating.

Yet economic reasoning implies that there is economic "reason," in brief, that the rationale of economic behavior can be presented and encompassed. It is not enough to use marginalism; the student must come to appreciate it as a generalized explanation. It is not enough to choose among the topics included in economics; the student must come to understand why and how the topics are necessarily and logically parts of the total explanation.

There is a perplexing conflict between the piecemeal type of economic reasoning the conference appears to emphasize and the description of the typical introductory course which attempts to provide a survey of macro- and micro-economics. Surely, the value of the survey should be that it presents the compass and integration of economic analysis and regards these as desirable, necessary, and attainable goals.

My comments on the papers of others may now be used to help clear up some misunderstandings about my own effort and also to show what I have learned from the conference.

It is perturbing to me to have my approach entitled "Pedagogy." It is true that I have sought to understand and use educational philosophy

and psychology in the presentation of economics. It is properly reported that the approach emphasizes the process of inquiry, of discovery rather than declaration. This part of the approach is both method and end--method because it helps the student see the logical unfolding of the subject and end because it helps to exercise him in economic reasoning. But the process of inquiry is not the total or even the major intent. Apparently, I have not made clear enough the use which I have for gestalt psychology. The purpose of the three gestalts--scaricty, flows, and systems--is that the student will be helped to organize the discipline in such a way that he will appreciate the compass and logical integrity of the subject itself and in so doing will be able to keep alive and functional the systematic nature of economic analysis. Inquiry serves the purpose of economic reasoning as process, and gestalts as patterns for economic reason; thus interpretations of economic reasoning are acknowledged.

My approach, then, does not significantly resemble Senesh's, for my method has the major goal of emphasizing and presenting the discipline of economics. The motivation arising from continuous and related exploration is to excite the student as a thinker, not to provide him with a reassurance about the usefulness of economics. He is induced to see the totality of economic analysis and then to think <u>as an economist</u> about its relatedness to social analysis. This approach is fundamentally different from a piecemeal application of economics to socio-politico-economic policies.

If I understand fully the approach of Fuchs and Warner, they assert for their method that "the knowledge the student acquires is thus

cumulative" (Concepts and Cases in Economic Analysis, p. vii). I presume that by "cumulative" they mean that he comes to recognize the integrative, systematic nature of economic explanations. If this is what they mean, their approach does resemble the goals I intend for mine. Yet mine differs from theirs because I stress directly the relatedness of economic concepts and they, as I understand, achieve such comprehension as a by-product of a study of specific instances. I question that students can ever arrive at a broad perspective and comprehension of a discipline as a by-product of case analysis, surely not in the relatively short period in which students in an introductory course are hopefully to acquire a terminal orientation.

It is apparent to me that the essential nature of my approach was not clearly understood by my colleagues. The inadequancy is surely, but not completely, my own. Could I have anticipated the reactions, perhaps I could have made my position clearer. But the insufficiency is also attributable to other causes. First, there seems to be such a bias against educational philosophy and psychology, usually identified with professional educators, that an economist is stigmatized who dares to lend them sympathetic attention. Second, the literature on these subjects is not familiar to most economists. References to Dewey and Whitehead and their realms of discourse are bewildering and bestir a disinterested respectfulness.

Yet aside from these attitudes towards educational philosophy and psychology, the more fundamental one is that of economists concerning the goals of economic education. It is my belief that students can reason their way into a comprehension of economics as a whole; the

subject can be seen and remembered and used in full compass. But from the conference I am forced to conclude that economists have abandoned that ideal and chosen another, namely, the demonstration of the reasoning process, supposedly "in depth," and apparently selectively and piecemeal. I do not know what has persuaded them to this choice. My guess is that they teach the survey course without confidence because they do not believe it can be taught and that this disenchantment comes about because they have not, as I have attempted, sought ways to accomplish their first and essential responsibility--to <u>teach</u> economics as a unified and usable system of thought.

The results of this conference are indeed ironic! My colleagues apparently disregard the help of educational philosophy and psychology yet end up being "progressive educators," orienting their presentations around people and teaching reasoning by exercise and personal motivation. On the contrary, I make use of educational philosophy and psychology to argue that economics as a discipline can be communicated. Yet my contribution is called "pedagogy," and theirs economics.

Still I must say that I learned a great deal from these papers. As an extension of the irony, I have discovered that my colleagues are much more willing to deal with the situations they face (for example, independent study arrangements) and to recognize the need for the training in thinking (case study, problem-solving, workshop, and so on) than I had supposed. In the light of their methods, I have been compelled to re-examine the educational basis of my own approach to see if I have made the fullest use of educational theory and to make sure that I have

not stressed unduly the reasonableness of economic analysis at the expense of the greatest possible exercise in the process of reasoning.

I believe, however, that my colleagues at the conference and elsewhere will eventually come to accept my view that, with the help of educational philosophy and psychology, economics is teachable as a subject and can be made exciting in and of itself.

Note by John E. Maher. An impression of these discussions is that we economists share the widespread prejudice against the work of professional educators and that we generally refuse to learn from those who have studied such a thing as "learning theory." That this is unfortunate is suggested by a reading of the paper by Meno Lovenstein.

Summary

The comments in this summary will parallel the divisions of the paper which has just preceded. By following this procedure it will be easier to recognize the position from which the project began and what has been learned in the process of preparing the materials. The conclusions, which follow this summary, will consist of a critique of the conceptions developed in the position paper which were tested by the writer's experiences in economic education and in this project. The comments are those of the writer. Other comments and criticisms by the consulting economists, the participating teachers and students and by the project staff are included in Chapter IV. References to these criticisms are given in this chapter.

Comments: Economics and Education

The schism between economists and educators, presented in the position paper as a characteristic of specialization, was also a problem for the staff of the project. The economist on the staff had taken the trouble to familiarize himself with the attitudes and assumptions of educators, but even so, there were many occasions in which he felt the need to "defend" his discipline against competing values which the educators esteemed. These "conflicts" mainly occurred in the preparation of the learning situations, for example, when the emphasis on a major idea was made possibly by sacrificing an important, if overly nice, economic distinction to the demands of interest-getting and clarity for students in the 9th grade. On the other hand, it appeared to the writer, who is an economist, that certain economic ideas ought to have been immediately clear to the non-economists, but he learned--once again--that clarity is not merely a function of intelligence.

In the introduction to this chapter, it was pointed out that the staff of the project spent a considerable amount of time discussing the position paper. These discussions and the continuous occupation with the development of materials proved the need and value for a period of ingestion of each other's values and concerns. Perhaps as much as three months are needed before a broad common core of understanding can be created. Such a common understanding could not easily be expressed in words, but it manifested itself in the increasing ease with which an economic concept was related to a learning situation.

In the position paper, it was stated that "one must work with intent and consciousness in a field really to comprehend it (p. 139)."

As members of the staff gathered experience in apprehending an economic concept and in worrying out methods for its presentation, they began to appreciate the importance of absorption and conscious participation on a project to facilitate the integration of disciplines. The thoughtful and minute relating of a technical concept to learning is time-consuming, but it is such oriented use of time which gives life to the union of content and method.

The writer has indicated in his position paper (footnotes 5 and 6) how much he learned from the various opportunities he has had in economic education, e.g., in the participation in workshops, seminars, the preparation of materials, etc. He wishes to cite another piece of writing, which was finished after the position paper, to show how continuous, perhaps un-ending, are the possibilities of increasing insight in economic education. In 1962, he published a volume entitled Capitalism, Communism, Socialism: Comparative Economic Systems.[3] The book, experimental in both content and language, was intended for use in both high schools and colleges. In writing the volume, the author confirmed for himself that the three-fold division of economics into scarcity, flows and coordination could be aptly applied to comparative economics, indeed, that the comparative economic approach helped to present economics in a generalized form by showing that scarcity, flows and coordination were categories applicable to any economic system. Exploration of the comparisons in coordination greatly improved the writer's ability to prepare the materials for Units 15 through 18 on Coordination. In

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[3]Meno Lovenstein, Capitalism, Communism, Socialism: Comparative Economic Systems, Chicago: Scott-Foresman, 1962.

content, he was able to make much more explicit comparisons between economies. In turn the explicit comparisons facilitated the preparation of learning situations. One of the important gains from the writing of the volume, which was of special use in the preparation of materials, was the recognition that economic "problems" could be thought of as a breakdown in coordination (Unit 18), a conception of great value in the writer's professional insights as an economist and in his work on the project. The volume of comparative economics was, of course, available to the staff.

To the writer's dismay, his position paper was not as explicit to the staff as he expected it to be. The difficulty may have been that he was attempting to integrate the content of economics with the demands of good pedagogy and thus had created a middle world which was not--perhaps could not be--adequately described. At any rate, his presence and the possibility of continuous explanation were necessary to translate his conceptions of the structure and logic of economics into materials.

A final observation about the "distance" between the professional in a discipline and the educators is that the teachers who used the materials experimentally in their classrooms also reported that it required two, three or four units before the teachers fully appreciated the effort to relate the structure of economics to the learning situations.

We may conclude that the project did succeed in narrowing the gap between economics and education, but there are nooks and crannies in the middle area which still call for cooperative exploration and venture.

Comments: Economics: Content and Method

The variations in viewpoints which we have been discussing have emphasized mainly the differences in knowledge and training of the participants. But one can be more precisely analytical about the difficulties of communication if one considers the meanings and confusions in the use of the terms "content" and "method." The position paper emphasizes two approaches to the definition of content and method and the inter-relationships between the definitions. In the first definition, it is stated that economists decide how their materials may be investigated and arrive at certain methods, e.g., microeconomics investigating the decision of the firms and macroeconomics dealing with aggregates of investment, spending, employment, etc. These <u>methods</u> then become the <u>content</u> of economics. It can be shown, however, that economists have modified over time their methods of analysis and hence what they consider to be the content of the discipline. Much confusion still exists both in the minds of economists and non-economists about this distinction of method from content. Hence, the position paper argues, properly I believe, that much of the difficulty in teaching economics is "the state of the discipline itself--the precise nature of its incompleteness and the specific points of confusion and contradiction (p. 140)."

Most non-economists, including those on the project, are not prepared to deal professionally with this type of confusion between method and content and, therefore, find it difficult to see how economic reasoning and the organization of the discipline might be influenced by different conceptions of method and content. Does it matter whether the discipline is divided into four economic processes (production,

distribution, exchange and consumption) as some texts still do, or into micro- and macro-economics as most texts now do, or into scaricty, flows and coordination which this project has accepted?

If there could be an appreciation of method and content, outlined above as the first definition, then there could be readier use of the second definition, namely, how the content of economics (its accepted methods) is related to the presentation of economics (that is, the method of communication). The position paper argues that the organization of the discipline greatly affects the ease and clarity of the learning of the discipline. Assuming the three-fold division into scarcity, flows and coordination, the position paper contends, and the materials have largely demonstrated, that economic reasoning can be continuously and effectively demonstrated (sequence), that organization (gestalts) can be established and used, and that the emphasis (selection of concepts) can be more effectively determined.

The writer did not feel confident during the preparation of the materials--and does not feel confident even now--that the subtle but essential distinctions of content and method, in both definitions, were as clear as they should have been to the non-economists on the staff. One source of difficulty may be that the concepts of content and method are used differently by the disciplines and by those in education. Another source is that the concept of discipline, as distinguished from a subject, is not as clear as it needs to be. The word discipline is used to mean the grouping and logical unfolding of the concepts of an area; a subject is thought of as a collection of concepts assumed to be related. The notion of discipline implies that the reasoning inherent in the

ordering of concepts and the sequence of analysis is at least parallel to the learning of the discipline. But an appreciation of such a parallel requires that one have a basic orientation in the discipline. Such parallel and equal understanding was not, in the view of the writer, always and adequately present.

Yet in spite of such inadequacy, within the framework of scarcity, flows and coordination, it worked out that economic reasoning, organization (of concepts), and emphasis were more effectively incorporated in the materials than could have been achieved by building on the four processes conception of economic content or on the micro and macro approaches.

Perhaps the reason for the degree of success is that the units were each built carefully upon the grid of three major categories (scarcity, flows and coordination) and upon two analytical themes (marginalism and institutions). It is highly significant that this grid for ordering each unit was not defined in the position paper but became part of the materials because of the need for a simplified and unified structure.

My criticisms of my own approach, in the materials rather than in the position paper, is first that we emphasized marginalism as a theme more than it should have been yet did not always make specific use of it in the learning situations and second that the concept of institutions was likewise left as a general, rather than a specific, frame of reference. In the latter point, we did not improve over this major fault in economic analysis, namely, that institutions are used as a

catch-all of the unexplained, often relying unclearly on other disciplines.

Yet with its limitations, the grid of major categories and analytical themes did help to establish the qualities of economics as a discipline and greatly facilitated the preparation of the materials.

For an economist, one haunting omission in the selection of concepts is that the pricing problem was not presented as diagrammatic analysis of supply and demand. Market structure and its consequences were covered, but no attempt was made to relate the structure and effects to the analysis of pricing by the firm nor to factor pricing. Many economists question the usefulness of price analysis even in a college introductory course. It is barely attempted in high school courses. Yet it is this writer's belief that given time enough, say, a two-semester-36-unit course, one could present meaningfully a substantial introduction to price analysis in the ninth grade. This confidence rests upon the success in the use of marginalism in Unit 3, What to Produce, in Unit 4, Allocating the Resources, in Unit 5, Stimulating Efficiency and in Unit 11, Determining the Nation's Income.

Comments: Guides from Educational Philosophy and Psychology

The position paper includes a careful statement about the problem of choosing among the philosophies and psychologies for guidance. It was pointed out that in choosing a philosophy one need not adopt it totally. Yet in making the choices of Whitehead and Dewey, the question was raised whether a philosophy of idealism (mainly) and one of pragmatism could be reconciled. Are there fundamentally different assumptions

about learning which in an eclectic view would affect the conception and development of the materials? A position of idealism could lead one to believe that economics exists somewhere as an organized body of ideas, either in the universe and perhaps latently in the mind of the student. If so, learning would imply a kind of creative rediscovery. If one adopts the pragmatic view, it would seem that order must be derived from experience. Since the project rests upon the notion of a discipline, its logic and unfolding, do these different positions of Whitehead and Dewey affect seriously the materials developed by the project? My feeling is that they need not. In regarding economics as a discipline, we make no assertion about its ultimate existence, origin or permanence. Nor do we have to say that discovery must mean the creation of order out of experience. Economics as a discipline is assumed to exist and the orientation of the teacher helps to secure its existence. Discovery by the student means guided learning in which discovery contains a recognition of implied relations, the pleasure of sequenced analysis and the growing recognition of the existence and the usefulness of grouping. I believe that an eclectic view of philosophies is acceptable and useful. I can see no serious distortions in the materials which could arise from using an eclectic position.

In the position paper it was argued that economic reasoning could be assisted by concepts of pragmatism and inquiry. The materials developed in the project emphasize learning situations in which the student is put in the position of accepting the dialogue or play as either his own experience or one that could be his own. The ordering and sequence which he is led to recognize might not be the one that he would

derive on his own, but he does come to see a possible sequence and ordering which is related to "his" experience. Similarly, the ordering or grouping of the concepts is guided by the teacher and may not be the one the student individually would have formulated. Nonetheless, the guidance is towards the recognition of a gestalt and the gestalt which he is guided to appreciate is, in fact, a major category of economics, e.g., scarcity. In these two uses of educational philosophy and psychology, the materials developed on the project spelled out the guides from educational philosophy and psychology expressed in the position paper.

However, the position paper also stated that Whitehead's notion of rhythmic education would be helpful in establishing the emphasis and the sequence or unfolding of the concepts. We did make a <u>general use</u> of Whitehead's notions of stages of romance, precision and generalization. In presenting the three major categories, we began with scarcity which has a built-in attention-getting, if you will, romantic appeal. The notion of scarcity was moved along towards precision but was not fully generalized. But in developing the materials, we discovered that Whitehead's highly suggestive triad did not help one to know easily or automatically what was the romantic part of an idea or how one could distinguish precision from generalization. So while the intriguing analogy was a general guide, we did not attempt to follow slavishly such a model in the sequencing of ideas. The sequence was basically established, to use Dewey's phrase, "by the logic of the subject." Here again, the phrase alerted us to the existence of a logic of the subject but did not reveal what that logic was. The logic of the subject was in fact derived from a knowledge of the discipline, but one was prompted to examine

the choices of grouping and sequence by keeping in mind that each discipline has its own logic.

In Chapter IV, some of the criticisms of the consulting economists were directed at the logic of the discipline adopted in the project. Their criticisms are valid, for variations in the grouping and sequences are possible. Their comments, however, do not imply that a discipline does not have a logic or that one may capriciously order the presentation of concepts. On the contrary, any suggestion of another grouping and sequence of presentation should be supported by arguments directed not only to a specific modification but to the entire presentation of the discipline. The guides that one may have from a judicious examination of educational philosophy and psychology are indeed guides and not prescriptions for choices.

An example of exploration in depth of a possible choice is the use of the concept of a "problem." It was indicated earlier in this summary that one of the important gains in the development of the materials was the treatment of an economic problem as a breakdown in coordination. But the writer had experienced a long struggle in placing the concept of problem in relation to a discipline. Social studies usually speak of "farm problems," "labor problems," etc. In his volume, Economics and the Educational Administrator, the writer of this chapter had pointed out that economic analysis itself is the problem. In developing economics as a discipline, it was made clear that by careful grouping and sequencing of ideas, the problem of analysis could be made interesting in and of itself. Having then clarified for himself what the concept of problem, related to a discipline, really meant, the writer was

put in the position of seeing more clearly how, in a narrower sense, an economic problem could be regarded as a breakdown in coordination. Thus, in trying to help others reason more clearly, a professional economist improved his own reasoning. It is regrettable that such an experience in professional growth arising from concern about teaching is not more widely appreciated by the masters of the disciplines.

Assuming insights can be increased and be sharpened by an appreciation of order and sequence, what roles should these play in the learning experience of students? There are two possibilities, not entirely mutually exclusive. One, the clear recognition of the grouping and sequence could be thought of as a goal of the materials. Two, the grouping and sequence may be thought of as instrumental in the presentation of economics as a discipline, so the student will not be expected to be sharply conscious of the major categories (scarcity, flows and coordination). From the tests on the appreciation of the major categories and sequences, it appears that the students were not able to define clearly the major categories nor be specific in pointing out the sequence of concepts. However, we do have evidence that the ordering and sequence greatly facilitated the communication. I am not certain why the grouping and sequence was not clearer to the students. Perhaps we failed to make the teachers aware that these dimensions are important and should be emphasized. I believe that a clearer definition of the categories and an appreciation of the sequence should be an end-product of the learning, because it would serve to heighten future learning about economics. Obviously, more thought must be given to this important part of the conception of the project.

Comments: The Experimental Course in the Principles

The experimental course referred to in the position paper was one offered at the college level. The college course, in turn, was built upon a course the writer offered at the high school level. Footnote 5 of the position paper lists two references to articles which summarize his experience with the offering at the secondary level. In a comparison and contrast of these earlier experiences with the materials developed in the project, both the similarities and the differences are striking and worth further comment.

The two major similarities are (1) the effectiveness of grouping and emphasis on sequence and (2) the importance of an oriented teacher and a strategy for student discovery. The differences are (1) greater clarification in the project in the statement of the major categories and analytical themes and (2) the detailed orientation of the teacher provided by the Teacher's Guide and (3) the provision of materials to facilitate student discovery. The differences highlight the progress that was made from the general conceptualization of the task to the carefully designed implementation of the approach. In the opinion of the writer, it would not have been possible to develop the materials on the project without the long journey of exploration into the status of the discipline, the use of educational philosophy and psychology, and the financial support to work out an instrument for instruction.

Conclusions

This completion of this project has been for this writer a culmination of a dream begun many years ago. The call to teaching, almost two decades of work in economic education, two books and many articles, all of these must be counted in his appraisal of his own participation in the project, the degree of the project's success and the problems yet unsolved.

Starting from a basic position as a professional economist, but always with a respect for the complexities of education, the writer has struggled to appreciate the essential relations of educational philosophy and psychology both to the conception and to the communication of his discipline. But with the distance in knowledge, attitude and understanding between these in the disciplines and the educationists, he has had to allow himself episodes of despair about the chasm to be bridged. Few economists recognize the need for professional understanding of educational philosophy and psychology and few non-economists are willing to acquire semi-professional competence in economics. The demands upon a person willing to make an effort at communication are truly intimidating. But a democracy must have an intellectual foundation and a competence in economics is an essential to an understanding of our way of life.

The importance of disciplined thinking, and hence the disciplines, is helped by the concepts of structure and process. Yet the writer has long known that it is easier to talk generally about structure and process than it is to establish and communicate them in a particular discipline. The achievement of the project is that it has

shown beyond doubt that economics can be presented as a discipline, that a discipline can be made interesting in and of itself, that teacher orientation can be achieved without expecting expertness and that students may comfortably discover economics.

No one can be sure what the ninth grade really is. But if it may be assumed that it is at the threshold of abstraction, if it can be shown that both able and less ready students can follow such abstractions, this project in ninth grade economics offers this reassurance: the possibility of good reasoning as a component of citizenship is greater than many believe. To this writer, the extent of hope depends in large measure on further explorations typified by this project.

CHAPTER III

CURRICULAR MATERIALS

The preparation of the curricular materials involved the activities of the economics team in formulating a structure of economics, and then using this structure as the basis for the curricular materials. The structuring of the materials and the suggestion of topics to be developed as student materials was primarily the responsibility of the economist (Meno Lovenstein). The Research Associates (Robert Ribble and Frederick Buchanan) were responsible for the development of learning situations to be used in the classroom by the teachers and students.

The general procedure followed in preparing the initial materials involved a number of separate steps:

1. The economist developed an outline based on each one of the eighteen major economic concepts to be presented during the semester course. Part I of the Teacher's Guide (The Sequenced Outline) contained the necessary economic content for each concept and related each concept to the structure of economics as part of an unfolding process. Part II (Outline of Teaching Suggestions) was designed to facilitate the teaching of the discipline of economics by dividing each unit into a number of manageable learning situations.

The format of the Teacher's Guide and the learning situations was decided upon after the first few units had been submitted to, and criticized by, the principal investigators. While the eighteen units were designed to fit into a semester length course, no time limits were set on individual learning situations. Some may require less than one class period for presentation, others may require more.

2. The learning situations for each unit were developed by the Research Associates, sometimes jointly and sometimes separately, but the final product was arrived at only after close consultation among all members of the economics team.

   The Research Associates were guided in the construction of the learning situations by the learning objectives explicitly or implicitly stated in Lovenstein's "Sequenced Outline" and by the theory developed by Maccia in "The Nature of a Discipline-Centered Curricular Approach." During the preparation of the materials stress was laid upon the need for meaningful student participation in the discovery of the main economic concepts and a concerted effort was made to avoid didactic presentations of economic "truths."

3. The last step involved the preparation of Student Materials. These were the same materials included in Part III B, Sequenced Learning Situations, in the Teacher's Guide, to which were added an Introduction. In no sense, however, were they to be viewed as a student text or workbook.

During the field testing of the materials the cooperating teachers mailed their critical comments on the learning situations and those of their students to the Social Studies Curriculum Center. At the conclusion of the field test, a conference of participating teachers was held in Columbus, and a free-ranging critique of the materials was made to the center's staff. In addition, members of the staff who assisted in scoring the achievement tests that were administered to the students also worked on the revision of the materials. In this way the tests acted as a feedback for the purposes of revision. A program of direct classroom observation also provided feedback. The written comments, the oral critique, the testing program and the classroom observations were all used as a basis for modifying the materials into their present form.[1]

During the revision phase, it was felt that a systematic statement of the learning objectives in the form of a series of propositions would be a useful aid to the teacher. The learning objectives have been tentatively classified into categories stated in Taxonomy of Educational Objectives, Handbook I: Cognitive Domain, edited by B. S. Bloom (New York: Davis McKay, 1956). Although not made a part of the prepared materials, these objectives are included in Appendix A.

The remainder of this chapter consists of the revised Teacher's Guide and the Student Materials.

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[1]For a more detailed description of the revision procedures, see Chapter Four.

TEACHER'S GUIDE

For The Teaching of Economics In The Ninth Grade

Prepared by the staff of the Social Studies Curriculum Center at the Ohio State University

July, 1966

TEACHER'S GUIDE

Introduction

The basic approach in these materials is to demonstrate the value of structure in the teaching of economics. We believe that an emphasis on the structure of a subject will help the teacher and student in the following ways:

1. To recognize the value of a disciplined analysis.
2. To re-discover the economic concepts in an orderly unfolding.
3. To demonstrate reasoning about economics.
4. To retain the orientation.
5. To relate economic analysis to economic policy.

The purpose of the Teacher's Guide is not to serve as a textbook in economics, but to aid the teacher in recognizing the structure of economics and to indicate how such structure can be used for more effective communication of economic concepts and reasoning.

By the structure of economics is meant: (1) the division of the subject into its major categories and (2) the basic analytical themes which run through the entire subject. Economics may be divided into three groups of ideas: (1) Scarcity and basic economic decisions; (2) The flow of goods and services and the flow of money; and (3) The coordination of economic activity. The basic analytical themes are: (1) Marginal analysis and (2) Institutions. The structure of economics may then be thought of as a grid.

Major Categories / Analytical Themes	Scarcity and Basic Economic Decisions	Flow of Goods and Services and the Flow of Money	The Coordination of Economic Activity
Marginal Analysis			
Institutions			

A brief account of the major categories and analytical themes will provide a definition and summary of economics.

1. Scarcity and Basic Economic Decisions

A major part of economics is concerned with the problems of satisfying our wants or needs with resources which are scarce. We do not have enough of natural and human resources to satisfy all of our wants. Even in a country as rich as the United States, many individual and social wants (for example, better schools and hospitals) are not fully satisfied. In poorer countries - and these include all the rest of the world - there is an even greater gap between the want or needs and the resources available to satisfy them.

But the notion of scarcity need not be limited to the gap between total wants and total resources. We also face the problems arising from relative scarcity, that is, the gap between a particular want and the particular supply of a good or service to satisfy it. Then, too, it is important to distinguish concepts of scarcity from the notions of abundance and surpluses which appear to contradict the existence of scarcity.

Our wants or needs can best be understood if we think of ourselves as both consumers and producers. As consumers we want or need food, clothing, shelter and a host of conveniences and luxuries which human ingenuity has been able to create. These are known as consumer goods and services. As producers, we need tools, machines and factories. These items are wanted not because the producers desire them for their own personal use but because the producers need them in their businesses. These are wants and needs which a society must also seek to satisfy. A certain percentage of those working will be employed to create these producer goods and services.

We say that goods and services are scarce compared with wants, but what is really scarce are the resources which go into the creation of these goods and services. These components or elements, called the factors of production, are: (1) natural resources - these are the land, sea and air from which are obtained lumber, minerals, foodstuffs and energy; (2) human resources, frequently referred to as "labor", of course, are the efforts contributed by human beings; (3) capital consists of the tools and equipment which enable us to make things or produce them more efficiently. (Sometimes the word "capital" is used to mean the money to buy the resources, but this is a different sense than the one used here); (4) the entrepreneur or management, meaning the individual or group of individuals who assume the risks of deciding what shall be produced and who shall supervise the production. Some economists include government as a fifth factor of production, for without certain government services (for example, the money supply) in most economies goods and services could not be produced.

Now, because resources are not adequate to satisfy all wants, decisions must be made. First, it must be decided What to Produce, since there must

be a choice. Second, a decision must be made about Allocating the Resources, that is, the factors of production will need to be moved or allocated where they are needed. Third, since resources are scarce, one must be concerned about Stimulating Efficiency, meaning that the scarce resources should be made to go as far as possible by using them efficiently. Fourth, since there is not enough to satisfy all wants, a decision must be made about Dividing the Goods and Services among consumers and producers.

2. The Flow of Goods and Services and the Flow of Money

The decisions which have been noted will influence the use made of scarce resources, but on each working day a stream of goods and services flows from mines, farms, factories, doctors' offices, and TV shows. But there is also another flow. Those who have helped to create the goods and services will be paid for their contributions - rent for land, wages for labor, interest for capital, profit for the entrepreneur and revenue for government. These payments constitute the flow of income to buy the goods and services. Economics then includes a study of these two flows and their relations to each other.

3. The Coordination of Economic Activity

Scarcity and the basic economic decisions and the flows of goods and services and money are common to all economies. It is primarily the method of coordination of economic activity which distinguishes one economic system from another. One needs to know how the decisions are made and how the flows are related. What are the social arrangements (institutions) through which the economy is coordinated? In a traditional society, custom will determine what is done with scarce resources. In the U. S., coordination is mainly provided by the market system, in the U.S.S.R. by planning, and in democratic

mixed economies (often called Socialist) by a mixture of the market system and planning.

4. Marginal Analysis

Making a decision or choice means that one possible action must be weighed against another. When one spends a dollar, a comparison is made among the various ways it could be spent and which will give the greatest pleasure. A similar idea is at work when an employer has to decide if he should hire one more worker, for he must measure the cost of the additional labor against the contribution from the additional unit of labor. The decision, in either case, focuses on the last, additional or marginal unit. Marginal analysis in economics, then, focuses upon the additional or marginal unit in economic decisions. Although the concept of marginal analysis has limitations, it is widely used in economics. It is an important element in decision-making and very helpful in demonstrating the nature of economic reasoning.

5. Institutions

An institution is a social arrangement which influences how we think and behave. It is composed of rules, customs and laws. Marriage, the family, the church, the school are social institutions. Economic institutions influence the way goods and services are produced and distributed. These institutions may vary in different societies and they are not all present in every economy, but a social scientist encountering a human society for the first time would naturally look for certain basic ones. The important economic institutions a social sientist would expect to find are:

Property. Is ownership private or public? How is the use of property controlled?

Decision-making. Are decisions made according to custom or tradition, according to a plan, or according to a meeting of sellers and buyers in a market?

Regulation. How is economic behavior controlled? Is it determined by tradition, by central authority through coercion, or through competition?

Money. If the society uses money, who is responsible for the issue and control of money? How are the savings of the society kept and how is the use of them determined?

Comments on the Teacher's Guide

By examining the Table of Contents for the Teacher's Guide, one can see how the three major categories of economics have been divided into 18 units of study. Now let us summarize briefly how the Teacher's Guide offers assistance in the presentation of economics. You will note that the same format is used in each of the units. The outline of the format is presented here, accompanied by a comment on the content and purpose of each part.

Format	Comments
Part I: Sequenced Outline	Part I, the Sequenced Outline, is not a textbook but a brief, orderly, related summary of the concepts in the unit. Part I also includes a section entitled, "Relation to other disciplines (illustrations)." The purpose is to make it easier for the teacher to recognize the relationships of economic concepts to those of the other social sciences.

Format (continued)	Comments (continued)
Part II: Outline of Teaching Suggestions	
I. Comments on the Content	
A. Problems in teaching the concept	Relates the concept to previous analysis. Suggests some general difficulties the idea may present.
B. The concept as part of the unfolding structure. 1. Scarcity 2. Flows 3. Coordination 4. Marginalism 5. Institutional factors	Indicates how the concepts in the unit are related to the structure, that is, the relations to the major categories and analytical themes.
II. Comments on the Learning Process	These comments are directed at general capacities and skills affecting the learning of economic concepts.
A. Vocabulary	Certain common words have a special economic meaning, e.g. scarcity. Other words, e.g. entrepreneur, may be entirely new to students.
B. Mathematical concepts and skills	Often the verbal description of an economic concept is basically mathematical. For example, the concept of scarcity contains the notion of wants being <u>greater than</u> goods and services. These comments alert the teacher to the mathematical content of an economic notion.
C. Ability to generalize	Comments here suggest why and how the student may be able to see the economic concept in a wider application.

Format (continued)	Comments (continued)
D. Background	Often the environment will influence the ability to learn, e.g. income levels may determine types of experience the student may have had. Sometimes the background may include classroom experiences. Finally, there are experiences nearly every human being has which may help him understand, provided the teacher is alerted to the existence and use of that element.
III. Learning Situations	This section provides the teacher with sequenced learning situations. They <u>parallel</u> the sequence of economic concepts presented in Part I, Sequenced Outline. The Student Materials are the same as the learning situations, but <u>without</u> the comments on the materials, intended only for the teacher.
A. From Teacher to Teacher	This section briefly summarizes the learning situations, shows how and why they follow one upon the other. The first unit in each of the three categories includes a chart showing the structure and unfolding of the concepts from unit to unit. It will provide the teacher with an over-view of the units in the <u>category</u>, e.g. scarcity. <u>Further comments on the teacher's role are included in a separate section below.</u>

Format (continued)	Comments (continued)
B. Sequenced Learning Situations	The teacher is provided with three to five learning situations which follow the sequence of concepts. The notion of sequence applies both to the position of a unit within the 18 units and also to the order of presentation of concepts within the unit. The reason for the variation of the number of units is commented upon in the section below on the teacher's role. The learning situations consist of dialogues, plays, stories, games, etc.

Comments on Teacher's Role

Let us summarize the presentation in this Introduction by focusing upon the teacher's role.

1. The effectiveness of the approach of these materials depends upon the teacher's orientation and willingness to play the structure-and-discovery game.
2. Playing the game means continuous emphasis on the relation of ideas, that is, the structure, and stressing the unfolding or linking of concepts.
3. While ideas are sequenced, some are more difficult than others, so the learning situations will vary in length. Hence, in some units there are three learning situations, in some as many as five.
4. The model or structure of the units is one we have worked on very carefully. No doubt, others could exist, but variations should be

as carefully weighed and developed as we have tried to do.

5. Some flexibility is possible in the use of materials. A teacher may want to use some of the learning situations as a lecture or perhaps introduce substitute situations, but again these alterations should be carefully worked out with regard to the structure and unfolding.

6. Discovery or re-discovery, we believe, will be stimulated by the recognition of structure and unfolding, but it is important that both the teacher and the student be <u>involved</u> in the discovery through a <u>continuous questioning attitude</u>.

7. Many teachers will want to know how the approach through structure and unfolding is related to grouping. There is an inclination to think that an <u>abstract</u> approach can be followed only by able students. We believe the structure and unfolding will enable less able students to see what the major ideas and relations are and the more able students will be provided a ready basis for further explorations.

8. The absentee problem, never easily handled, may appear to offer more difficulty in an approach emphasizing the continuity of concepts. However, <u>because of the continuity</u>, it should be easier to fit in the parts which the student may have missed.

SCARCITY AND BASIC ECONOMIC DECISIONS

Unit 1: Definition of Scarcity

Part I: Sequenced Outline

I. A major division of economics includes the concept of scarcity and the basic economic decisions which are necessary because of scarcity. What is scarcity? The term "scarcity" means that man's needs and wants are greater than the goods and services available to satisfy them.

II. Usually, defining parts of an idea helps to make the notion clearer.

   A. Needs suggest necessities and wants include both necessities and luxuries. It is often difficult to distinguish necessities from luxuries, yet the distinction is important since it influences our buying.

   B. The term "goods" includes all material objects, for example, clothing, food, tools, machines, etc.

   C. Services include the work of teachers, doctors, salesmen, etc.

III. Scarcity can be thought of in two ways.

   A. All needs and wants are greater than all the goods and services, a comparison of totals.

   B. Particular needs and wants may be comparatively greater than the particular supply of goods and services which could satisfy them. This situation is relative scarcity.

   C. Both versions of scarcity are important in economics. The idea of total scarcity indicates why the subject of economics exists. The notion of relative scarcity is needed to explain why there are prices, that is, why one good or service may sell for more than another.

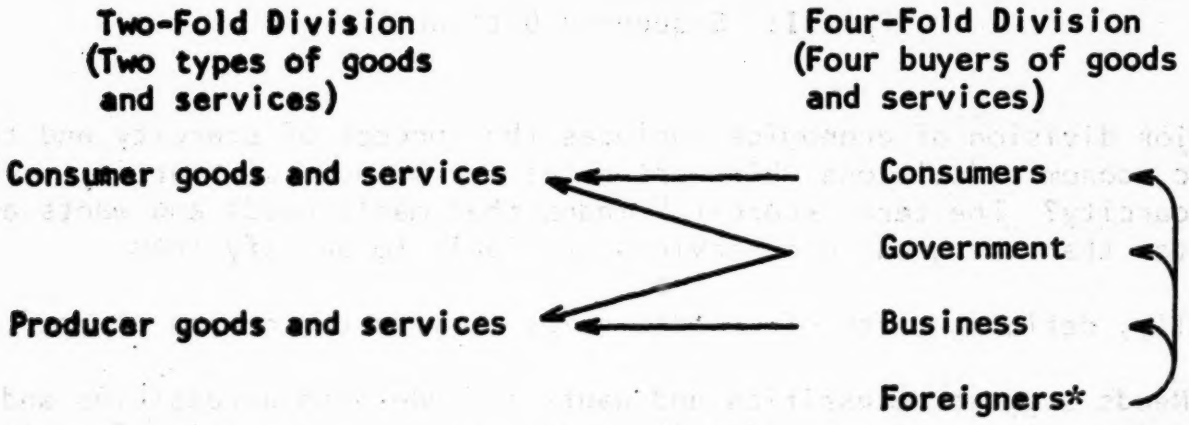
IV. Goods and services can be divided into sub-groups, a division which proves very helpful in economic reasoning.

   A. Consumer goods and services are those produced for direct use by consumers.

   B. Producer goods and services are created because they are needed to produce other goods and services, for example, tools, machines, factories, workers, management.

   C. At this point, the two-fold division is sufficient, but later, in the discussion of Flows (Unit 10), we will see that economists also make a four-fold division of goods and services into those intended for (a) consumers (b) producers (c) government and (d) foreigners. Both the two-fold and four-fold divisions are basic in economics.

The four-fold division can be reduced to a two-fold one, for example, by including most of the government expenditures as social consumption. Foreigners buy as consumers, producers or governments.



*Foreigners, of course, act as consumers, businesses, and governments.

V. Relation to other disciplines (illustrations)

A. Geography: Uneven distribution of world's resources; effect of transportation on availability of resources; territorial division of labor and its relation to scarce factors of production.

B. Sociology: Human resources-population and labor force; levels and standards of living as influences in the definition of scarcity; role of custom and habits in determining wants.

C. Political Science: Laws affecting wants, e.g. Pure Food and Drug Act; laws affecting ownership and use of goods and services, e.g. owning and operating an automobile; contracts to buy and sell goods and services.

D. Psychology: Variations in tastes for goods and services; variations in spending and saving; origin of wants.

E. History: Migrations, wars, in part caused by scarcity. For example, the Peloponnesian Wars among the Greeks.

SCARCITY AND BASIC ECONOMIC DECISIONS

Unit 1: Definition of Scarcity

Part II: Outline of Teaching Suggestions

I. Comments on the Content

A. Problems in teaching the concept

1. The brief definition of scarcity given in this Unit is only the beginning of a definition. Further explanation of the parts of the notion extend the definition. This approach means that an idea is never completely defined; it acquires more and more meaning as additional implications and consequences are seen.

2. Later, in the use of discovery situations, we will see how new meanings can be acquired.

B. The concept as part of the unfolding structure

1. Scarcity: Although the definition has been brief and general, the notion will be clearer when we examine the scarce factors of production (Unit 2) and the basic economic decisions (Units 3, 4, 5, and 6).

2. Flows: Decisions made by consumers, producers, government, and foreigners will influence what and how much will be produced; in other words, decisions affect the flow of goods and services and the flow of money.

3. Coordination: It is obvious that the millions of decisions will have to be coordinated, e.g. there must be some way to relate the decisions of consumers and those made by producers. Right now we are simply setting the stage by showing that scarcity requires decisions and then that the decisions must be coordinated.

4. Marginal analysis: At this early point, we have not stated what the decisions are or how they may be made. Even so, the discussion of necessities and luxuries implies that it is easier to give up a <u>last unit</u> (marginal unit) of a luxury than a necessity.

5. Institutional factors: With the discussion of necessities and luxuries, it is possible to begin on an analysis of customs and institutions which influence our choices. It is also possible to bring in the collective expenditures made through government.

II. Comments on the Learning Process

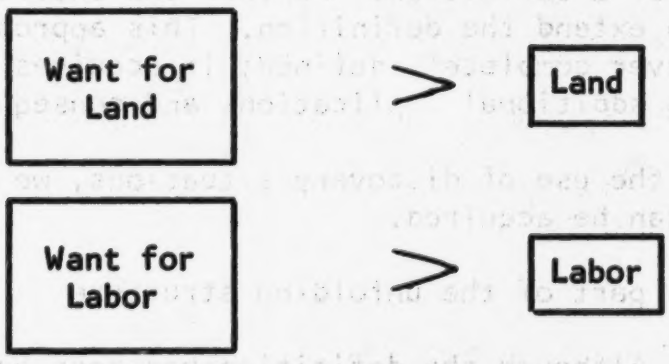
A. Vocabulary: The term "scarcity" will be familiar to most students, but defined as a relationship between wants and goods and services it should be considered a new word.

B. Mathematical concepts and skills

1. Since wants and needs are usually greater than the goods and services, the relationship is one of inequality. (The symbol $>$ means greater than and the symbol $<$ means less than.)

2. It is likely that the algebra of inequalities will not be clearly defined as a "tool" in the students thinking, the general idea of inequality, however, does exist in his thought processes.

3. Relative scarcity can be illustrated simply.



The want for land is greater in proportion to the land than the want for labor is to the quantity of labor. This is an illustration, not a universally true statement.

C. Ability to generalize

1. The concept of "not enough" is a generalization everyone understands. The emphasis in the term "scarcity" is to show that the situation is more general than most people realize; also the concept is more specific.

2. The idea of abundance may make it more difficult for some students to see the generalized notion of scarcity.

D. Background

1. The concept of scarcity can be illustrated from personal experiences, with special attention to those familiar to ninth graders.

2. The word "scarcity" will sound different to students from homes with low incomes.

III. Learning Situations

A. From Teacher to Teacher

The first learning situation is designed to illustrate to ninth grade students that they already have a considerable informal awareness of the problem of scarcity. The dialogue represents a typical teen-age

conversation on the theme of scarcity. The discussion following the reading of the dialogue may be used to help the students see that the notion of scarcity is much more complex than they may have realized.

To probe the complexity, we then turn our attention in the next learning situation to an examination of goods and services. It is important to note that wants may be satisfied by both goods and services. The content of this learning situation is directed at showing that services as well as material goods are used to satisfy wants.

We started with an informal awareness of scarcity, then examined wants and goods and services. These explorations have prepared the way for a more sophisticated expression of the concept of scarcity. The third learning situation establishes a relationship of inequality between wants on the one hand and goods and services on the other. The materials illustrate two ways of thinking about scarcity relationships: Total Scarcity and Relative Scarcity. It is the ability to see the distinction between total scarcity and relative scarcity that constitutes the sophistication aimed at in this learning situation.

There may be a tendency for teachers to "drag out" the learning situations by viewing the time required for each one as the equivalent of a class period. This is not necessarily so. Some may take much less than one class period; others may require more. For instance, it is quite possible that the first two units may be completed in five class periods.

The following diagram is a schematic representation of the expansion of the concept of scarcity that unfolds in the first six units of this course in economics. At this point, it is presented as an overview to the teacher. When the students have enlarged their definition of scarcity in terms of the factors of production that must be combined to produce goods and services (Unit 2), the diagram will be included in the student materials.

ECONOMICS

UNFOLDING THE CONCEPT OF SCARCITY

SCARCITY (Units 1-6)

FLOWS (Units 7-14)

COORDINATION (Units 15-18)

Unit 1

Wants (Necessities & Luxuries)

Goods & Services (For Consumers & Producers)

Wants > Goods & Services

Scarcity: Total & Relative

Unit 2

Wants > Factors of Production → (4 Basic Decisions) → 1. What to Produce →

Factors of Production
- Natural Resources
- Labor
- Capital
- Entrepreneur
- Government

Unit 3

Consumer & Producer Goods and Services

Present & Future Goods and Services

Savings & Investment

Levels of Output

Need for institutions to make the decision

Unit 4

→ 2. Allocating the Resources →

Mobility of the factors of production

Mobility and adjustment

Ability and willingness to move

Costs and prices in the allocation of resources

Unit 5

→ 3. Stimulating Efficiency →

Definition of efficiency (productivity)

Sources of efficiency
- Specialization (comparative advantage)
- Capital (Real)
- Scale of enterprise
- Motivation
- Education, Science, Technology

Unit 6

→ 4. Dividing the Goods and Services

Ways of dividing:
- Equally
- Status
- Able and Willing

	Able	Willing
Consumers		
Business		
Gov't		
Foreigners		

B. Sequenced Learning Situations

1. First Situation: The Teen-age World of Economics

a. The following sample dialogue may be used to introduce this unit (Student Materials, page 523):

Chuck: Did you see Jim's new transistor radio? It's great. It even has a plug-in earphone.

Dennis: He showed it to me yesterday. I wouldn't mind having one but not for twenty-six bucks.

Chuck: That's a lot of cash! I've got thirty-two dollars saved up but my mom says I gotta use some of it to buy clothes. Do you have to buy clothes out of your money?

Dennis: Naw, but my pop always harps on how much he spends for my clothes and stuff whenever I try to hit him for some extra money.

Chuck: What's the diff? I get the money but I can't buy the things I want with it. Mom says I need shoes and shirts for school, so I tried talking her into letting me get a pair of loafers for four bucks and two of those dollar shirts like Steve got at Lancers then I'd have enough to get the radio; but right away she says I can't buy none of that cheap imported stuff. She's trying to talk me into spending twelve dollars for shoes and six for shirts. If I buy a radio with what's left, all I can get is a junky one like Cindy's, but if I save up for a good one she'll be after me to buy socks or something.

Dennis: I feel for you. Last month I wanted eight bucks for a new hand brake for my bike and my dad trots out his big, black, budget book and shows me how much he spent on me that month. He even included the twelve dollars for the dentist. You'd think I wanted those cavities filled. I even tried the safety pitch. Can't ride the bike without good brakes you know. He told me to walk.

Chuck: I know. The other day my mom started hinting around that the dentist bills should come out of my money.

Dennis: I can't wait till I'm old enough to get a job and spend the money the way I want to.

b. The following questions may be used to focus the students' attention on the need for definition during the discussion

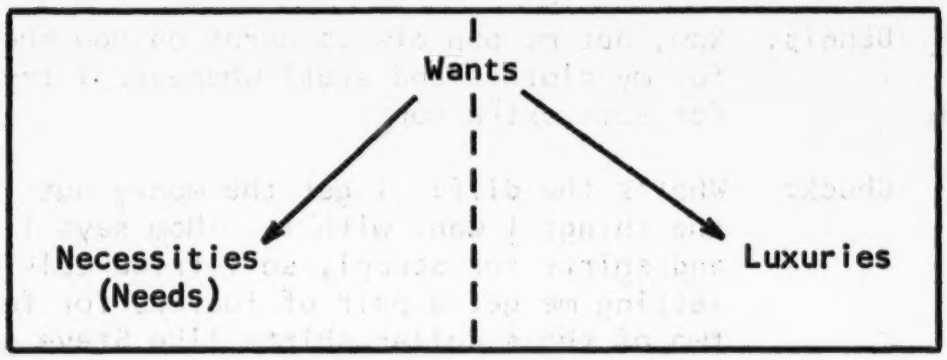
that follows the reading of the dialogue. These questions are merely suggestions. The teacher may find the direction of the discussion may flow towards the same end (i.e. definitions of needs, wants, goods and services) by other means:

(1) What are the things you must have to survive?

(2) What are some things that you want that are within your present income possibilities? (Or possible for you within the next six months.)

(3) What are some things that you want that seem far beyond your income possibilities?

c. These questions lead to the idea that <u>needs</u> suggest <u>necessities</u> and <u>wants</u> include both <u>necessities</u> and <u>luxuries</u>. This can be illustrated as follows:



(1) Let us suppose that Dennis did not have his cavities filled. One afternoon he gets a terrible toothache. Getting relief from his toothache now becomes more important to him than almost all his other wants. How is what the dentist does for him different from what a new hand brake does for him?

(2) Why can't both Dennis and Chuck and their parents have everything they want and need?

(3) Have the students make a list of ten things that they want. These instructions are given in the Student Materials, page 524.

Arrange the list in order from one to ten according to things wanted most to things wanted least. How do you define the difference between necessities and luxuries?

2. Second Situation: Goods and Services

a. The following illustrations may be used to show how services might be compared to material goods (Student Materials, page 524):

(1) We can think of a doctor selling his services as if they were "packaged" as material goods.

one appendectomy	and	two spinal x-rays

(2) a teacher:

one year's supply of algegra	and	one year's worth of writing skills

(3) a policeman:

48 hours of protection	and	2 hours of traffic control

b. The distinction between goods and services can be illustrated by asking the students to list some things on which they have spent money during the last month.

(1) Which of these things would you classify as <u>goods</u> and which as <u>services</u>?

(2) Do you spend more on <u>goods</u> or <u>services</u>?

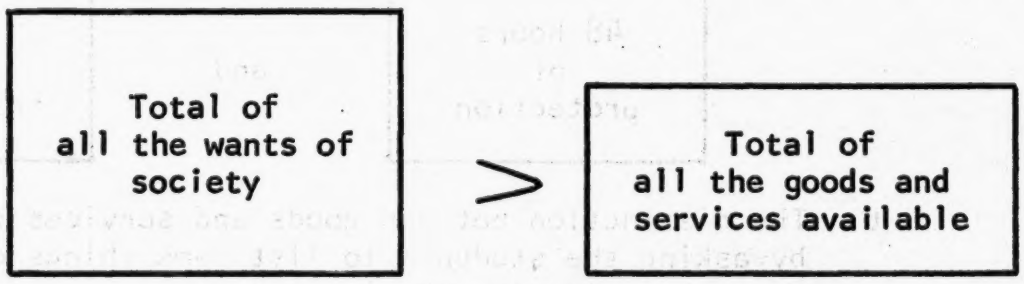
Both goods and services can be divided into sub-groups. These sub-groups help us to reason about economic decisions. Goods and services that are produced for direct use by consumers are called <u>consumer goods</u> and <u>services</u>. <u>Producer goods</u> and <u>services</u> are created because they are needed to produce other goods and services, for example, tools, machines, a worker's skills, etc.

c. From your knowledge of businesses in your community make a list with at least ten examples of businesses that deal with <u>consumer's goods</u> and another list of ten examples that deal with <u>producer's goods</u>. Also, find one example of a business that deals with both consumer and producer goods.

3. Third Situation: Concept of Scarcity

a. Have the students read the following brief account (Student Materials, page 526):

At noon on December 1, all activity in the United States stops. Every single individual in the country fills out a form on which they list everything that they want at that time. At 1:00 P.M. the forms are collected in the post offices across the land and sent to the U. S. Department of Commerce. Business firms also fill out forms on December 1 listing the quantities of all the goods and services available for sale on that date and these forms are also sent to the Department of Commerce. The data from these forms is fed into computers and on January 1 the Department of Commerce discloses that on December 1 Americans wanted 400 billion dollars worth of goods and services and that business firms had only 300 billion dollars worth of goods and services available to satisfy these wants. Economists in America rejoiced. At last they had evidence to prove that total scarcity existed. They could now say that at any given moment the total of all the wants in our society is greater than the total of all the goods and services available to satisfy these wants. This could be illustrated as follows:



The Department of Commerce has never conducted such a survey and it is very unlikely that they ever will. An important reason for not conducting such a survey is that most people want things that they have a reasonable hope of getting. On a form that would ask people to list the things that they wanted, we could never be sure that people were limiting themselves to only those things which they could reasonably expect to get. We could list several other objections to the conclusions of our imaginary survey; in fact, the problems involved in proving the existence of total scarcity are so great that it is doubtful whether the idea of total scarcity can ever be proved in this way.

The idea of total scarcity, however, helps us to explain a great deal about the economic behavior of people even though its existence cannot be proved with a survey.

b. Returning to our imaginary Department of Commerce Survey, suppose that they had included the following table of statistics:

Table 1

Imaginary Survey
Department of Commerce
December 1, 19XX

Wants		Goods and Services Available	
Item	Dollar Value	Item	Dollar Value
1. 60,000 automobiles	150,000,000	1. 30,000 automobiles	75,000,000
2. 40,000 regular TV sets	6,000,000	2. 20,000 regular TV sets	3,000,000
3. 30,000 color TV sets	15,000,000	3. 10,000 color TV sets	5,000,000
etc.		etc.	

If we let □ stand for 10,000 units of each of the above items we can picture the relationship between wants and goods and services available in the following manner:

Table 2

Item	Wants	G and S Available	Ratio
1. Automobiles	□□□□□□	> □□□	2 to 1
2. Standard TV sets	□□□□	> □□	2 to 1
3. Color TV sets	□□□	> □	3 to 1

We see in Table 2 that the relationship between automobiles wanted and automobiles available (2 to 1) is the same as the relationship between the number of standard TV sets wanted and the number of standard TV sets available (2 to 1). Automobiles and standard TV sets are equally scarce. But the number of color TV sets wanted is three times as great as the number of color TV sets available (3 to 1). We can therefore say that color TV sets are relatively more scarce than automobiles or standard TV sets. The comparison of the degree of scarcity of one item (say automobiles) with the degree of scarcity of another item (say color TV sets) is called relative scarcity.

Even though we may never be able to discover the exact degree of scarcity of automobiles or the exact difference between the scarcity of automobiles and color television sets, it is helpful for us to realize that relative scarcity, as an idea, explains much of society's economic behavior.

c. The Student Materials contain (Student Materials, page 528) an additional application of the concept of relative scarcity. The teacher may find that as the student works out this second illustration that he will have an added opportunity to make the distinction between total and relative scarcity.

SCARCITY AND BASIC ECONOMIC DECISIONS

Unit 2: Definition of Factors of Production

Part I: Sequenced Outline

I. Scarcity has been defined as <u>total</u> wants being greater than <u>total</u> goods and services <u>or</u> a <u>particular</u> want being relatively greater than a <u>particular</u> good or service.

A. A brief discussion of wants and needs was given in Unit 1. Further analysis will be given in Unit 3, What to Produce; and in Unit 6, How to Divide the Goods and Services. Both of these units are better places to discuss the various wanters and what they need and want.

B. In this unit, the definition of scarcity will be further developed by exploring what goods and services are made of, namely, the <u>factors of production</u>: natural resources, human resources, capital, entrepreneur and government.

II. Natural Resources

A. Natural resources are found in nature, for example, land, water, coal.

1. Of course, knowledge about the uses of these elements is basic to their being useful. "Did atomic energy exist <u>for man</u> until he knew about it?"

2. Later we will learn that the costs involved in producing and transporting natural resources will determine whether these are "economic," that is, may be used.

B. Natural resources are unevenly distributed in the world, a fact which will be drawn upon later when we discuss specialization.

III. Human Resources

A. The term "human resources" is used broadly to include all human effort, both brain and brawn.

1. In defining the people involved in producing goods and services, data is available for the Labor Force. The civilian labor force (excludes the military) is defined as those 14 years old and over who are working or seeking work.

2. Although included in data for the labor force, two groups are usually considered separately because of the specific responsibilities they each have as factors of production. They are (1) the entrepreneur, defined below under V, and (2) government personnel, defined below under VI.

B. Data for the labor force is provided in a number of groupings which help us understand more about human resources. Such groupings are occupations, industries, age, sex, hours of work, degree of skills, educational background.

IV. Capital

A. Tools, machines and equipment are examples of human ingenuity applied to natural resources to create aids to production and to make possible increased efficiency.

B. Tools, machines and equipment are real capital. The word capital is also used to mean money capital, that is, the money needed to acquire all of the factors of production. This use is the more familiar one, but it is important that the two meanings be kept clear.

C. To create real capital, it is necessary to use factors of production which could have been used instead to make consumer goods and services.

1. Both consumer and producer goods and services are being produced at the same time. Since the factors of production can be used to produce either for consumers or producers, choice is important. Real capital helps to produce more efficiently, but it is still necessary to decide how much resources should be devoted to creating real capital.

2. Tools and machines (real capital) must be produced (1) to replace the tools and machines which are wearing out and (2) to add to the total amount of tools and machines which the economy has.

V. Entrepreneur

A. It is necessary that the factors of production be brought together so that the goods and services may be produced. The individual or groups of individuals who supervise this task or take risks in guessing what should be produced are called entrepreneurs. The word "management" is often used instead of entrepreneur, but it suggests corporate management so it is too narrow a definition; it would leave out the single proprietor and the partnership.

B. The entrepreneur may be defined by describing his responsibilities, as in V.A. above, or by the legal definition of the business unit, e.g. the individual proprietor, the partnership, the corporation, the cooperative. Many government operations resemble businesses, e.g. the post office, but they differ in some important characteristics, e.g. the profit motive (see comment on Government which follows next).

VI. Government

A. Many government activities are essential to the operation of the economy, for the production of goods and services could not go on without government, e.g. the provision and supervision of the money supply, the laws defining and enforcing contracts.

B. Yet most textbooks in economics do not include government (Federal, state and local) as a <u>factor</u> of production. They do recognize the role of government.

VII. Relation to other disciplines (illustrations)

A. Geography: The theme of the uneven distribution of the world's resources can be further explored (see Unit 1), but now the new dimension of transportation, relative fertility of different lands, etc., can be added.

B. Sociology: The population in terms of those participating in the labor force, age, sex, skills, etc., can be examined in both economic and sociological aspects.

C. Political science: Different laws affecting the various factors can be discussed, e.g. Can one use land to grow opium? What of special laws for mothers and for child labor?

D. Psychology: In discussing human resources, what is meant by brain and brawn; can they be separated, etc.?

SCARCITY AND BASIC ECONOMIC DECISIONS

Unit 2: Factors of Production

Part II: Outline of Teaching Suggestions

I. Comments on the Content

A. Problems in teaching the concept

1. The important development in content is the extension of the definition of goods and services into their components. The two new emphases are the extension itself and the recognition that goods and services, as with any idea, can be more fully analyzed.

2. While the factors of production can each be clearly defined and illustrated, they are interrelated and often overlap, e.g. <u>improved</u> land represents both natural resources and an investment of capital.

3. Some terms, e.g. capital, can be used with several meanings. We saw also that human resources can be broadly defined to include all such resources <u>or</u> all those <u>except</u> persons working as entrepreneurs and for government.

4. Some texts in economics refer to natural resources, human resources (including entrepreneurs and government) and man-made resources (real capital). Many texts refer to natural resources as "land" and some texts use the term "raw materials."

B. The concept as part of the unfolding structure

1. Scarcity: Analysis makes it clear that what are ultimately scarce are the factors of production out of which goods and services are made. There can be, of course, <u>relatively</u> greater scarcity of land compared with labor, etc., and also relative scarcity of one kind of land (or labor) compared with another kind of land (or labor).

2. Flows: When the factors are being used, one can think of them as <u>flowing</u> into the creation of goods and services. Later we will see that the payment to the factors, e.g. wages <u>paid</u> for labor, represent a flow of money.

3. Coordination: Since the factors of production can have endless number of uses and can be combined in various ways, there must be some way to coordinate and integrate these various uses. Speculation about the problem of coordination can be introduced in the discussion of the multiple uses of the factors although the discussion of coordination will come later.

4. Marginalism: As each of the factors of production is employed, a question can be raised about how many units should be used and the value of the last unit (marginal unit). One could even pose the problem of comparing the contribution of the last unit of land, say, another acre, with the employment of one other person.

5. Institutional factors: Institutions are significant in each of the factors, e.g. the right to own land and to sell it - private property; special considerations which must be given to labor, e.g. it is not legal to sell or buy a human being.

II. Learning Process

A. Vocabulary:

1. The names of the factors of production are excellent examples of familiar words used with special meanings, e.g. labor, capital, entrepreneur.

2. Such terms may apply to the same object but with different uses, e.g. a truck used by the farmer as a family auto is both a producer and consumer good. Hence, words may be defined as objects or uses.

B. Mathematical concepts and skills

1. The analysis of goods and services into factors of production helps us to measure or quantify each of the factors, e.g. labor can be thought of as the number of people working times the hours they work, giving us a figure for man-hours.

2. Each of the factors will have a degree of scarcity compared with the want for that factor; our familiar notion of relative scarcity (see Unit 1). If one factor is more scarce than another and can be substituted for it, one can calculate the marginal rates of substitution, e.g. possibly two workers for one acre of land.

3. The costs of employing the factors of production are totaled to indicate the possible selling price.

C. Ability to generalize

1. The names of each of the factors of production are generalizations covering many items, e.g. natural resources, types of labor, etc. Real capital is illustrated by tools and machines, but these are different; to see them as capital means a generalization of the characteristics they have in common.

2. Three of the factors of production will offer little difficulty in generalization, namely, natural resources, labor and capital; two might--the entrepreneur and government.

D. Background: Each of the factors can be illustrated from personal experience. Perhaps the contribution by government will require further probing of their personal and social experiences.

III. Learning Situations

A. From Teacher to Teacher

In Unit I we discovered that in the majority of societies the total of human wants are greater than the goods and services available to satisfy them. This unit explores the elements that must be brought together in order to produce goods and services. Economists call these elements the factors of production. In subsequent units, the definition of scarcity will be extended to read: in the majority of societies the total of human wants are greater than the goods and services available to satisfy them <u>because of the scarcity of the factors of production</u>. The purpose of this second unit is to define these factors of production.

The first learning situation moves from a consideration of production in a familiar snack bar setting to the more complex situations found in an automobile plant and a dairy. The emphasis, at this stage, is on having the students create their own categories for comparing the elements of production found in these industries. The last part of the learning situation translates the categories developed by the students into the formal language of the economist.

After establishing the terminology, the remaining learning situations in this unit examine the five factors of production. The interaction of human and natural resources is explored first because it is this interaction that leads to the formation of capital. After an examination of the meaning of the term capital, the problems involved in bringing human resources, natural resources, and capital together are discussed in the learning situations devoted to entrepreneurial and governmental services necessary for production.

B. Sequenced Learning Situations

1. First Situation: What Are the Factors of Production?

a. The following passage may be used to elicite from the students their ideas as to what the factors of production are (Student Materials, page 529):

In a large American city a few years ago the police department converted an abandoned air strip into a drag strip for the use of teen-agers who wished to try out their mechanical creations. Not only was the number of automobile accidents reduced but the strip itself became a center of community entertainment for young and old. On any summer weekend hundreds of spectators flocked to the drag strip. It didn't take too many hot evenings to make the public drinking fountain and the sole "coke" machine completely inadequate to satisfy the thirsty throats of the spectators.

A couple of high school students saw possibilities in this situation: potential customers were just waiting to satisfy their thirst and hunger and were apparently willing to pay for it.

When the students approached one of the parents for advice on the possibility of setting up a snack-bar he told them that he'd be willing to loan them money to begin the project. Before he did that, however, he asked them to draw up a list of the things they'd need to consider before they could begin satisfying the wants of the drag strip spectators. In other words he was asking them to list what combination of things would produce the items necessary to satisfy the wants of the crowds.

What are the factors of production as far as the drag strip snack-bar is concerned? In response to this question students will probably list such things as ice, soda, freezers, paper, meat, cooking utensils, ice-cream, cash, cooks, salesmen, building or trailer to serve as kitchen, etc.

In order to expand the idea on more complex levels the students could be asked to make two other columns in which they list the things that would be necessary for the large scale production of automobiles and milk. The response to this would probably take this form:

Snack-Bar Concession Stand	Automobile Plant	Dairy
paper cups	steel	cows
napkins	tools	milking machines
ketchup	factory	barn
hamburger meat	workers	grass
hot dogs	paint	trucks
ice	upholstery	refrigerators
grill	gasoline	workers
soda	electricity	manager
building (stand)	rubber	electricity
straws	foreman	salesman
workers	manager	money
manager	glass	
money	money	
cooler		
electricity		
license to sell food		

b. The task now is to help the students fit these items into some common categories and relationships, e.g. cooks, mechanics, and farmers are related as part of the labor force. Ice, steel, and grass are related as supplies or raw materials. The important point is to discover that all three products - hamburgers, cars and milk - are produced by certain combinations of the factors of production

and that these factors may be categorized under several different headings. Such student classification might probably follow this form:

Workers
Supplies
Money
Management

The teacher can then explain that for the sake of convenience and clarity of understanding economists have given these classifications special names:

(1) Workers and managers are both parts of HUMAN RESOURCES.

(2) Supplies (ice, paper, steel, grass) are generally referred to as NATURAL RESOURCES.

(3) A bank account, lathe, cow or grill are generally categorized as CAPITAL.

c. Two important factors may evade the student - (4) ENTREPRENEURIAL SKILLS and (5) GOVERNMENT SERVICES. The first of these may be viewed as a special subdivision of human resources - the entrepreneur does more than manage or labor however, he takes the risks, makes major decisions and is the basic coordinator of all the other factors of production as well as being a factor himself. Government service may be got at by asking questions such as: Who prints the money used in the business? Who inspects the meat used in food products? The object of this first situation is to enable the student to see and grasp the idea that wants and needs are not satisfied by rubbing Aladdin's lamp. They can only be satisfied by utilizing the factors of production in an appropriate way.

2. Second Situation: Human and Natural Resources

a. What is a natural resource? When did uranium become a resource? Is whale oil still a resource? These questions and the hypothetical account that follows provide a basis on which to develop a more precise definition of natural resources. (Student Materials, page 529)

Imaginary setting

Before the invention of substitute materials, a black shale called slate was used exclusively in the production of blackboards. (Many persons still prefer the natural slate blackboards.) In the process of quarrying the slate large amounts of inferior shale must also be removed. Throughout the slate district of eastern Pennsylvania, large piles of this inferior shale dot the landscape. This useless shale is not considered a

resource; in fact, it is considered a nuisance, a blot on the natural landscape.

Now we will imagine that a process is discovered by which this useless shale is changed into a fuel. By placing the shale under enormous pressure a liquid fuel is extracted. This "fuel ale", as we will call it, has certain unique characteristics: it is not affected by changes in temperature, it burns slowly and gives off ten times as much energy per cubic centimeter as any existing liquid fuel. The cost of producing a barrel of "fuel ale", however, is thirty times as great as any existing liquid fuel.

As man becomes interested in space travel, the need increases for a liquid fuel that is not affected by drastic temperature changes and requires less storage space than conventional fuels. Large scale production of "fuel ale" begins. The shale piles are fenced and multi-million dollar processing plants are erected.

In ten years the increased research on fuels for space travel favor the so-called solid fuels. Production of "fuel ale" stops. The unused piles of inferior shale still dot the Pennsylvania landscape. There is talk about a new use for the shale piles. The shale could be crushed and used to form construction blocks for buildings in conjunction with the new solar heating units.

b. The following questions are also included in the Student Materials as an aid to the students in arriving at a definition of resources:

   (1) Why is shale not considered a resource?

   (2) Why did "fuel ale" fail to become a resource at first?

   (3) What circumstances led to its becoming a major resource?

   (4) What part could human resources have possibly played in making shale a resource?

   (5) Once a resource has been developed how could it influence the development of human resources?

   (6) After you have thought carefully about the above passage and questions, write your own definition of what a natural resource is.

c. Many times social studies textbooks suggest that Paraguay or some other unindustrialized nation is relatively poor in natural resources. The students may be assigned to write a paragraph explaining the meaning of this statement in terms of the preceding definition of natural resources. For example, students may be asked to think of Saudi-Arabia before and after the discovery of petroleum.

d. Our discussion of natural resources should have led students to the realization that a definition of natural resources as "those things provided by nature" must take into account the influence of scientific and technological information and human skills. No definition of natural resources can exclude the human influences which utilize the resources and make them available as resources. Now we will turn this idea around. Once a use has been discovered for certain natural resources the abilities of humans working with them also develop. These developed human resources in turn may discover new science and technology if the necessary physical substances for their advancement are in the environment.

e. The following film would be appropriate for this unit on factors of production. It deals with natural and human resources, capital, managerial talent, and governmental services to production.

"The Nation's Resources," produced by National Educational Television and Radio Center, 10 Columbus Circle, New York 19, New York.

Available from

NET Film Service, Audio Visual Center, Indiana University, Bloomington, Indiana,

or

Encyclopedia Britannica Press, Inc., 425 North Michigan Avenue, Chicago 11, Illinois.

3. Third Situation: Capital

a. The following short story and the accompanying questions (Student Materials, page 531) should help pinpoint the role of capital as one of the factors of production in a short term one-man economy:

Green River Blues

Keith wondered how on earth he could have got into such a fix. Here he was, miles from civilization with faint chances of making contact with human beings for days or perhaps weeks. He sat down on the damp sand and gazed unhappily at the steep canyon walls. What had started as a canoe trip through the rapids of Green River in western Colorado now took on the appearance of personal tragedy - for Keith at least.

When the canoes hit the last stretch of turbulent water Keith had managed to guide his craft through the first few yards when suddenly he rammed a partly submerged log which was running the rapids too. The canoe spun to

the left and to the right in a crazy pattern and in a second the pleasant canoe trip turned into a wild and wet struggle for survival among the swirling waters of Green River.

When Keith's eyes became accustomed to the sand-laden water, he saw his canoe being tossed like a paper cup on the rocks on the west side of the river. The remainder of the canoe party were rushing through the half-mile stretch of rapidly moving water. Even if they knew of his plight, they could do little to aid him. The next landing place was many miles downstream where a regrouping had been previously scheduled. This was no time for a planning session, though. The foaming waters pushed him against his will and lodged him between two massive rocks almost opposite the wrecked canoe.

Breathing short, hurried gasps of air he held onto the smooth cold rock. It was impossible to get to the canoe, but beneath the east wall of the canyon at this point there was a beach - a strip of land, at least. Keith hesitated and then acted. His only hope was to make it to the east bank. The cold water began to numb his arms and legs, but with effort born of fear and a last spurt of energy he struggled across the narrow channel of swift flowing water and clambered on to the sandy shore.

He was not alone - lizards scattered in all directions as he made his way to a higher level - flies buzzed around his head. He saw in an instant that he couldn't go anywhere. Beyond the few jasmine bushes and willows the canyon walls rose precipitously to the cloudless sky. His hands clutched at the damp sand and he threw it vengefully at the turbulent water. He began to think - if only he had followed instructions about . . oh, well, what good was there in worrying about what he had or hadn't done. At least he was alive and he could do something to stay that way. He began to survey the situation and laid out on the sand his total possessions: one knife, some string, a small first aid kit strapped to his belt and 28¢ in cash. Oh, for a hamburger, he thought, but quickly realized that hamburger stands are not too common on the isolated beaches of Green River. The 28¢ was worthless for the present.

A movement in the small pool of water to his left drew his attention. In one of the many side pools formed by water escaping from the main current of the Green as it swirled past rocks and logs, he saw the fleeting form of fish. His hunter's instinct came into play and he fashioned a hook from one of the safety pins in the first aid kit. Baiting it with a crudely made worm in the form of a piece of band-aid he lowered it into the pool on the end of the string. Eventually he landed a fish.

At least he wouldn't starve, he thought, and then he said slowly to himself, "Raw fish!" The idea revolted him and he cast about for some alternatives. He needed fire, but how could he get fire. The afternoon sun had just begun to hit his side of the canyon and he had noticed a coke bottle near the water's edge. He smashed the bottle against a rock and using the thick bottom began to focus the sun's rays on the dry bark of a dead willow. It was a tedious process, but after 20 or 30 minutes smoke, then flame, began to emerge from the bunch of tinder-dry bark. Later he

felt much like a caveman as he crouched over the small fire and licked the last morsel of fish from his fingers.

The sky was beginning to cloud over and his thoughts turned to shelter and sleep for that night. A cooling breeze began to move through the canyon. He was really a caveman, he thought, without a cave. Selecting the largest of the rocks scattered on the higher level he decided to use it as one side of a lean-to. With his knife he cut into the willow stand and after much bending and pulling and hacking he managed to produce poles which he used as rafters for his lean-to. He covered them with a mixture of dry bark and grass and hoped for the best in case of rain.

He kept the fire burning in spite of the smoke the green wood was producing. "Better to have the smoke," he sputtered, "than to be eaten alive by gnats." Besides, it could lead to his rescue if anyone took the trouble to look for him. He became depressed at that thought and began to wonder if he was worth looking for. "Anyone as stupid as I am deserves to be lost," he muttered under his breath. Thoughts of how he could be rescued crowded into his mind until finally he gave up and crawled into his home and went to sleep.

A water ouzel seeking its first food of the day awoke him next morning with its short, sharp cries. He stirred himself with difficulty from his hard bed of sand and grass. Sand seemed to be everywhere - in his eyes, nose, ears and throat. His neck was raw with the pressure of damp sand on the life jacket he had used as a pillow. Staggering to the water's edge he tried to wash the sleep from his eyes and in the process added more sand. "Sand and water everywhere and not a bite to eat," he thought as he tried to locate the canoe.

It was still held securely in the grips of the rocks. In the canoe were the things he needed so that he could exist for a few days at least: canned fruit, beans, flour; a saw, flashlight, matches and . . . he stopped short. He was wasting his time again. The canoe was as worthless to him as his 28¢. He couldn't make use of things he didn't have at his disposal.

He thought back on the stories he had heard about Robinson Crusoe and the Swiss Family Robinson. They had managed to survive alright but they had the fortune to land on South Sea Islands with plenty of fruit and animal life. He didn't exactly relish the idea of roasted lizard but if . . . well, he decided to wait and see if the day would bring rescue.

In the meantime he set about making himself more comfortable. A few old wooden crates had been washed ashore and he took them apart using a hand-sized rock. He straightened out the nails and used the wood and nails to reinforce the roof of his lean-to.

The fish in the pool were still biting. This time he cooked the fish by wrapping them in layers of wet leaves (and the ever present sand!). He wondered how many different ways he could cook fish - dry it, roast it, boil it - no, he didn't have a pot! He could always preserve it by drying

it on a board, but that would only be done if he wasn't rescued shortly. Rescued - he rolled the word on his tongue as if it were dessert. How much he'd appreciate all the things he had grown accustomed to at home.

Just then he looked up to see in the distance a group of river runners approaching the rapids. Their rubber rafts fairly bounced from wave to wave. Keith rushed to the river's edge and waved his hands wildly. As they approached they spotted his canoe and then turned to see him jumping frantically on the shore. The leading raft was maneuvered into the channel fringing the sand and Keith almost threw himself bodily on it. As he recounted the happenings of the last two days to the expedition members he was almost too excited to talk distinctly. One word recurred time and time again. A weather-beaten man in the uniform of a Colorado State Game Warden looked suddenly half serious. "Did you say fish?" "Yes," said Keith, "I caught them in a side pool." "I suppose you have a license for fishing," the warden asked. Keith felt in his back pocket and pulled out a sodden piece of paper - his fishing permit. Yep - his fishing had been legal, fully authorized by the State Game Commission.

b. The following questions may be used to focus discussion on the concept of capital covered in the story:

(1) What items in the story were used by Keith as real capital?

(2) What goods were produced by this real capital?

(3) Which factors of production were used by Keith to produce the real capital?

Comment: Real capital involves a <u>choice</u> between using them to (1) produce <u>consumer goods</u> for the direct use of the consumer, (2) develop <u>producer goods</u> used for the production of consumer goods.

(4) Into which of the above categories would the following items fall?

fish-hook
fish
coke bottle
willow poles
firewood
rock (used to smash bottle)
knife
leaves
bark

Comment: Real capital enables man to satisfy his wants more efficiently.

(5) How did having a knife prove of value to Keith?

(6) Would a razor blade or saw have been more or less efficient?

(7) Would the 28¢ be considered capital in this particular situation?

4. Fourth Situation: The Entrepreneur (Student Materials, page 534)

a. The role of the ENTREPRENEUR as one of the factors of production may be approached by utilizing an actual case study. The following deals with the rise of the steel industry in the United States and its major entrepreneur, Andrew Carnegie.

Steel[1]

Before the 1850's the only way to produce steel was by the costly crucible process. As a result, steel was expensive and its uses limited. In the 1850's the discoveries of Bessemer and Kelly solved the problem of carbon content, and the result was a 2/3 drop in steel prices. Steel was now available for rails, structures, machines, and a myriad of other uses.

Despite the discovery of the Bessemer process, the American steel industry did not develop overnight. The techniques were new and the risks were high. The demand for steel was there, but someone had to be willing to bear the risk, to sell the steel, and to raise the large amounts of necessary finance.

The Building of the Industry

In Andrew Carnegie the economy had such a person. Carnegie was particularly well suited to the task. His first job had been with the Pennsylvania Railroad and he well knew the railroads' need for a long-lived heavy-duty rail. Moreover, he had maintained close relations with many of the leaders of the industry. More recently he had been associated with a number of iron firms in the Pittsburgh area and with the Keystone Bridge Company. From the iron firms he learned something of heavy metal production problems and from the bridge company of the potential market for structural steel. In addition to his work experience, Carnegie possessed yet another talent that was to contribute to his success in the new steel industry. He was experienced in bringing together the finance needed to acquire large amounts of capital. He had launched both his iron enterprises and the Keystone Bridge Company by bringing together groups of strangers, each with some money to invest. Although the steel mill was larger than any of his previous ventures, the financial problem was really the same.

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[1] Lance E. Davis, The Growth of Industrial Enterprise: 1860-1914. Published in cooperation with Scott, Foresman and Company. Copyright 1964, Curriculum Resources, Incorporated. Pp. 6-12. Reproduced by permission.

In 1872 Carnegie launched the Carnegie Steel Corporation. His first mill was the J. E. Thompson, and his first product was steel rails. Gradually he and his partners expanded their operations to include a number of new plants (some built, some acquired from less successful owners) and a full range of steel products.

Labor Problems

Problems of risk and capital acquisition were not the only ones that faced Carnegie. As his firm grew (and as other firms entered the industry and began to compete for workers) he found that he needed additional laborers to man the mills. Because of the early technology of steel production (a technology that required two tons of coal for every ton of iron ore) the mills were located near the coal fields. As the industry grew there were insufficient workers in that area to meet the demand for labor. To some extent the new mills attempted to train people who migrated from nearby farms, but this was insufficient to meet the rising demand for steel. As a result, immigrants from abroad (first from Germany and then from eastern Europe) were induced to come to Pittsburgh to man the blast furnaces. Although it is impossible to determine exactly how many immigrants found employment in the mills, we do know that the number of foreign-born in Pennsylvania rose from one in six in 1870 to one in four in 1910. Moreover, if local histories and newspapers are to be believed, the proportion in the steel towns must have been much higher. Carnegie himself leaned heavily on immigrant labor and his best mill manager (and later a partner) was William Borntraeger, a German who could not speak English when he first went to work for Carnegie.

Competition

Although Carnegie's remained the largest firm, others were quick to imitate his success. Within a few years National, American and a host of others had begun to produce steel by the new process. Because of the competitive threat of these new firms, Carnegie could not rest on his laurels. As a result both Carnegie and his competitors quickly innovated the open hearth furnace, which provided more control over the steel-making process. Within a few years the Bessemer furnace that had given birth to the industry was relegated to a secondary position. In 1872, when Carnegie started in business, the steel industry had produced only a few thousand tons. By 1887 production was almost 6 million tons, and at the turn of the century output had risen to almost 25 million tons.

The Birth of U. S. Steel

But the story of steel was not yet finished. The capital requirements, always large, had increased with the adoption of the open hearth techniques. Moreover, Carnegie and some of the industry's other leaders saw that even more financial resources would be needed to acquire iron and coal mines if the firm's source of supply were to be protected. John D. Rockefeller had gained control of a large portion of the Mesabi iron range in Minnesota and he showed the industry the value of its raw materials. Carnegie had been able to finance some of this additional

investment, but many of the other firms could not. J. P. Morgan, the financier, saw in this shortage a chance to put together a single firm. It was to embrace all phases of production (mines, railroads, shipping lines, blast furnaces, steel mills, and fabricating plants) and produce not only rails and structural steel but wire, tubing, and the new alloys as well. Carnegie's retirement gave Morgan the chance to bring together not only Carnegie's holdings but also Rockefeller's iron mines, Federal Steel, American Steel and Wire, the Bessemer Steam Ship Company, National Steel, National Tube, American Bridge, American Sheet Steel, and a number of lesser companies. Thus the United States Steel Corporation was born. With this new giant in the field, the nation's output of steel continued to rise and by 1920 output had reached 60 million tons. Moreover, by that year new firms, including Bethlehem and Inland, although small by the standards of U. S. Steel, had risen to take part of the market from the dominant firm.

The Impact of Steel on the Economy

Nor does the story end with the steel firms themselves. The impact of Carnegie, Morgan, and the others was felt in all parts of the economy. In 1860 the size of machines was limited by the strength of their wooden or cast iron components. By 1900, the day of the wooden machine had passed. There were practically no size limits on those made of the new steel. The railroads of 1860 had used iron rails, but these rails limited the size of the rolling stock to about eight tons and wore out in two or three years. By 1905, the steel rails carried cars of 70 tons and lasted up to ten years. In almost every large city, new high-rise buildings were pushing their way skyward. As long as the main structural material had been wood, building height could not exceed five or six stories. With steel, however, skyscrapers (the Woolworth and Flatiron buildings, to name two) of over 50 stories were built.

b. The following questions may be used to center discussion on the role of the entrepreneur:

(1) Why do you think Carnegie decided to manufacture steel rails rather than, say, paper clips or safety pins?

(2) What risk was involved in his decision?

(3) What change in his decision <u>might</u> have occurred if motor vehicles and air transport planes had been invented and developed in 1874?

(4) What special personal skills aided Carnegie in the development of his corporation?

(5) Carnegie said that he wanted his epitaph to read, "Here lies the man who was able to surround himself with men far cleverer than himself." How did this ability add to his success?

(6) What might have been the result if Carnegie had been unable to use immigrant labor? What alternative choices could he have made and still succeed in developing his business?

(7) Why was Carnegie able to acquire capital to finance his steel company while others failed to get the necessary capital?

(8) How did Carnegie as entrepreneur "lead, focus and channel human and physical resources" in the production of steel rails?

5. Fifth Situation: Government as a Factor of Production (Student Materials, page 537)

a. In the previous learning situation we discussed the role of the entrepreneur in bringing together natural, human and capital resources for production. This production, however, does not take place in a vacuum, it occurs in an environment and certain conditions must be present before production can take place. The environment must be fairly stable. Some degree of stability must exist before the entrepreneur will risk bringing human, natural, and capital resources together for production. Such stability is aided by government services performed at the local, state, or national level. There is no general agreement about where the services should be performed or how extensive the services should be; however, these policy questions will be studied later. At this point, we are only concerned with the <u>minimum government services necessary for production</u>.

b. The role that government should play in the economy is still being debated. Some economists do not consider government services as a factor of production. Studies of the emerging nations of Asia, Africa, and South America, however, highlight certain government services as factors necessary for production. Four areas of government services stand out clearly in this connection: 1. the provision and protection of transportation routes, 2. the provision and supervision of the money supply, 3. the laws defining and enforcing contracts, 4. the definition and protection of property.

To help us see the role of government as a factor of production, let us imagine what would happen if all of these basic governmental services were eliminated. We will write the first part of this tale and let you complete it.

Nihilos Against the World

About ninety-eight million miles away from the star known to earthmen as Proxima Centuri exists a small planet called Nihilos. They have been successful, however, in keeping their existence a secret from the prying eyes and ears of earth's optical and radio telescopes by shielding themselves with a hydrogen emission barrier. Earthmen assume that the "noise" they pick up on their radio telescopes comes from a highly contracted, dying star; what they call a black dwarf.

The atmosphere of Nihilos is very similar to Earth's atmosphere; but, since Nihilos is a greater distance from her sun, evolution has occurred more rapidly than on Earth. In short, Nihilosians need a new home. They have more effective weapons than earthmen possess but they cannot use them for fear of permanently destroying the Earth's atmosphere and environment. The Grand Council of Nihilos decided on a strategy that would make earthmen defenseless against even such conventional weapons as guns and tanks.

Hypnosis was the key to the strategy. While earthmen were concentrating their equipment on one of their moon shots, five small space craft each carrying three Nihilosians landed at five different secluded areas on the Earth. With the aid of a device known as a Synaptron, they were able to lock in certain thought patterns in the minds of earthmen whom they choose as subjects--maybe we should say victims. Each earthman, thus synaptrized, was able to transfer his thoughts into the minds of every human being he came in contact with. The plan which the Nihilosians programmed into the minds of the unsuspecting earthmen called for the creation of an anti-government party. This party called for a step by step elimination of all government services. Rather than become involved with the usual earth arguments over what government should or should not do, they struck at the very heart of all governments. The famous "Four Steps" were:

1. All building, maintenance, and protection of roads, railroads, harbors, and air strips by government must stop.

2. All government control and regulation of the money supply must end.

3. All laws defining and enforcing contracts must be repealed.

4. All laws defining and protecting property must be repealed.

Although the anti-government party came into control in every country of the world, the records for the United States give the most interesting account of the step by step disintegration and the eventual take-over by the Nihilosians.

In July 1976, just three months after the printing of the first Anti-Government Party publication, D. E. Stroy, their leader, was in the White House. All local and state governments were already abolished, the former president was impeached and found guilty, Congress had voted itself out of existence and D. E. Stroy had won a unanimous election with the promise

to enact the "Four Steps." A small group of "hard heads" were immune to the Synaptron. They put up an insignificant resistance and were soon rounded up and shot.

As the "First Step" was put into operation a scramble took place among private individuals to buy up roads, harbors and maintenance equipment. Toll gates were erected along all major roads, sometimes as many as twenty-five in a hundred mile stretch of road. The rates varied enormously, but the average cost of travelling a hundred miles was $18.00. Trucking companies bought large stretches of roadway. In some cases these companies refused to allow competing trucking companies to use their roads and in all industries that required extensive transportation of raw materials or finished products, the price of the products skyrocketed. Because of these transportation difficulties, the total production of the country was drastically reduced, but the citizens were thoroughly synaptrized and the following year the "Second Step" was taken.

The "Second Step" called for the elimination of all government control and regulation of the money supply. D. E. Stroy closed all the Federal Reserve Banks and sold all the gold at Fort Knox to private individuals. Every commercial bank started printing its own money.

What effect does this have on production? Using your imagination, complete the story.

6. Sixth Situation: Combining the Factors of Production (Student Materials, page 539)

   a. The previous learning situations analyzed the factors of production separately. Before production can take place, obviously, the factors of production must be brought together.

   b. The following assignment asks the students to explore this process of combining the factors of production:

      Assign each student a short "research" paper in which they would be required to describe a local product or business in terms of the five basic factors of production. For instance, the student can use his own observations or interview the owner or manager of a local bakery, dairy, gas station, lumber yard, etc. A short sketch of when the business was established and why it was established could be followed by an account of how natural resources, etc. play a part in the business. Can the students find examples of past businesses which failed because of the absence of one or more of the factors of production? A similar research project could be conducted through use of library materials.

SCARCITY AND BASIC ECONOMIC DECISIONS

Unit 3: What to Produce

Part I: Sequenced Outline

I. A general discussion of scarcity was presented in Unit 1. In extending the definition, Unit 2 contained an analysis of the factors of production, that is, the components of goods and services. Now we will further analyze needs and wants as we face the first basic economic decision, What to Produce.

   A. The need to make the decision arises from the scarcity of the factors of production.

   B. Since there are not enough factors of production to produce everything we may want, it is necessary to decide <u>which</u> goods and services and <u>how</u> <u>much</u> of each should be produced.

II. Of course, the number and kinds of goods and services are endless, but for purposes of analysis, they may be divided into either two or four groups (Unit 1, Part I).

   A. The two-fold division: consumer and producer goods and services

      1. Consumer goods and services are those produced for <u>direct</u> use by consumers, e.g. food and clothing.

      2. Producer goods and services are created because they are needed to produce other goods and services, e.g. tools, machines, factories, workers, management. Producer <u>goods</u> are the same as <u>real</u> <u>capital</u>. Producer services are the workers they hire.

   B. The four-fold division of goods and services and its relation to the two-fold division was briefly discussed at the end of Unit 1, Part I.

   C. The reasons for the division of goods and services into either a two-fold or four-fold division will become clearer later in the discussion of Flows. At this stage, the two-fold division is adequate, since it leads us into main elements of the decision, What to Produce.

III. The decision about making consumer goods and services or producer goods and services is actually a choice between <u>present</u> <u>vs</u>. <u>future</u> goods and services.

   A. The farmer who eats the corn he should have saved for planting would be choosing a <u>bowlful</u> of corn <u>now</u> at the cost of a <u>bushel</u> <u>next</u> <u>year</u>.

   B. A choice must be made, then, in using our scarce resources: how much should go for consumer goods and services to be used up in a short period of time (say, a year) and how much for producer goods and

services which will increase productivity for a long period of time? The choice is between "present" versus "future" goods and services.

1. From the discussion of capital (Unit 2), we know that real capital increases efficiency or productivity.

2. Although the tool or machine will be bought at one time, it will last for a period of time. It will contribute to efficiency in the first year and, as it continues to be used, will contribute to efficiency in future years.

   a. "Future" goods, then, applies not only to next year's output but that of subsequent years.

   b. The period of production may be a year or a part of the year (i.e. seasonal).

IV. Now, acquiring the producer goods (real capital) means saving and investment.

A. We know that each year both consumer goods and producer goods are created.

1. When consumers spend, they pay for consumer goods. Where does the money come from which goes to buy the producer goods?

2. Producer goods are paid for with the savings of the entire economy. Savings, then, are income received but not used for consumer goods. When these savings are used by producers to buy producer goods created during the year, the purchase is called investment. Note, the economist is using the words "savings" and "investment" with special meanings. He is talking about the use which the economy makes of its total income. These topics will be discussed fully under Flows, particularly in Unit 11.

B. The emphasis, at this point, is that in the decision, What to Produce, we are making fundamental choices when we spend our money for consumers goods and services or when we save (do not spend) and the money is used to buy (invest in) producer goods and services.

V. The decision, What to Produce, means that we must also decide on the total amount of goods and services we wish to produce, that is, on the level of output.

A. By working longer hours, employing more people (younger and older), we could increase the output, e.g. during World War II.

B. If we increase the amount of real capital, we make it possible to increase output.

C. We could decide not to increase the output of goods and services, but to have more leisure.

VI. Finally, every society must have customs, laws and institutions through which the decision, What to Produce, can be made.

A. These customs, laws and institutions make up the economic system.

B. These systems will be discussed at length under Coordination (Units 15 through 17). Grossly simplified:

1. In a traditional society, the decision, What to Produce, is made through customs and traditions, e.g. agriculture in an Indian village.

2. In a market economy - illustrated by the U. S. economy - the decision is made through a chain of markets. When the consumer makes a purchase, the act of buying is a signal which is passed on to the retailer, then to the wholesaler and finally to the manufacturer. Sometimes this purchase or signal is called the "dollar vote."

3. In a planned economy - illustrated by the economy of the U.S.S.R. - the decisions are set by a plan, e.g. a 7-year plan.

VII. Relation to other disciplines (illustrations)

A. Geography: The decision about what to produce is often influenced by geographical factors, e.g. availability of resources, nearness to markets, physiographic difficulties for transportation.

B. Sociology: As already indicated, customs and institutions play an important part in the coordination of economic activity. They are usually imbedded in the culture, e.g. both in traditional societies and in advanced ones.

C. Political Science: Many economic institutions affecting decisions are expressed in written laws, e.g. contracts, private property.

D. Psychology: When choices are made, the psychology of the consumer and producer must be explored to see how psychological factors will influence the decisions, e.g. one individual's view of present vs. future goods and services will differ from another's.

SCARCITY AND BASIC ECONOMIC DECISIONS

Unit 3: What to Produce

Part II: Outline of Teaching Suggestions

I. Comments on the Content

A. Problems in teaching the concept

1. In Unit 2, the discussion of the factors of production extended the meaning of scarcity by analyzing further the components or elements of goods and services.

2. In recognizing that scarcity - a basic circumstance or situation - compels an individual or society to face or make a decision, we are extending the definition of scarcity. We are examining more fully a situation and its relation to institutions for handling it and we are beginning to examine the relation of analysis and policy.

3. The decision, What to Produce, is one of four (see Unit 1, Definition of Economics). All economic decisions may be grouped under these four basic ones.

4. The decision, What to Produce, implies (a) the need to group goods and services (two-fold or four-fold division), (b) a recognition of the different consequences of producing consumer and producer goods and services, (c) an examination of how producer goods are acquired, (d) the need to set the level of output, and (e) the need to provide a social mechanism for making the decision. These implications are related to each other and follow logically, one from the other.

B. The concept as part of the unfolding structure

1. Scarcity: The fact of scarcity makes it necessary to make basic economic decisions. The decision, What to Produce, requires an exploration of the elements involved in such a decision (see item 4 above).

2. Flows: The two-fold or four-fold division of the goods and services being produced indicates that the flows can likewise be divided: goods and services into consumer and producer; the flow of money into the amount spent for consumer goods and the amount saved and invested in producer goods.

3. Coordination: The need to make the decision, What to Produce, means that a method of coordination must be provided for making this decision.

4. Marginalism: In making the choice between consumer goods and services and producer goods and services, the point of choice is to compare the gain from an additional unit of consumer goods and services with an additional unit of producer goods and services, e.g. the value of a marginal unit of clothing compared with the marginal unit of investment.

5. Institutional factors: The system through which the decisions are made are composed of customs, laws and institutions. Another example, financial institutions involved in collecting and redistributing the money savings.

II. Comments on the Learning Process

A. Vocabulary

1. The terms "present" and "future" goods are unfamiliar uses of time and will require special attention.

2. The words "spending", "saving", and "investment" are familiar words used with special meanings. Of course, in economics they are also used with their more familiar meanings. Caution and exercise will be necessary in establishing the special meanings.

B. Mathematical concepts and skills

1. The concept of marginalism in the choice of consumer and producer goods and services (see marginalism above) can be illustrated with a mathematical example (see also Mathematical skills under Unit 2).

2. The concept of efficiency or productivity (to be discussed in Unit 5) is a relation of output to input. The beginning of the idea is used in the notion of the contribution of real capital to efficiency.

3. The choice of making a producer good and influencing the output of future goods demonstrates a choice which has a series of consequences, that is, the choice is the <u>first step in a process</u>.

C. Ability to generalize

1. The two-fold and four-fold division of goods and services illustrates the need to group items in order to make analysis easier. In grouping millions of consumer goods and services, one is choosing a major characteristic, namely that they are intended for direct consumption by consumers.

2. Similarly, in the notions of saving and investment, the division is based upon the general idea of the funds for acquiring producer good and the act of purchasing the current output of producer good. Other aspects of saving and investing are not discussed here, for example, the role of financial institutions.

D. Background: The perspective of looking at choices between consumer and producer goods and spending, saving and investment may not, on the surface, appear part of the student's world, yet some significant examples can be found, e.g. saving and investing some of their allowance to buy an electric soldering iron or a bicycle with which to deliver newspapers.

III. Learning Situations

A. From Teacher to Teacher

The second unit extended the definition of scarcity by illustrating that the scarcity of goods and services is due to the fact that the factors of production are either insufficient or not mobile enough to keep pace with the wants of society. Because of this scarcity of the factors of production, almost every society must face the following basic economic decisions:

1. What to produce?

2. How to allocate the factors of production (resources)?

3. How to stimulate efficiency of production?

4. How to distribute the production among the members of the society?

This unit explores the economic concepts involved in the decision - What to Produce? Obviously part of this decision is outside of the discipline of economics. The goals of a society are mainly determined by historical and cultural influences, but the economic concepts give us a framework for understanding the economic implications of these non-economic influences.

At the end of Unit 1, we briefly mentioned the two-fold division of goods and services made by economists. This separation of consumer goods and services from producer goods and services (real capital) is very helpful in analyzing a societies decisions about - What to Produce? Although not all goods and services fall neatly into one category or the other, enough of them do and we can get a picture of the decisions of a society in terms of the amount of <u>present</u> goods and services (Consumer goods and services) it wants as compared with the amount of <u>future</u> goods and services (Producer goods and services) it hopes for.

By making use of an imaginary society and its resources and some elementary arithmetic, the first and second learning situations give the students an opportunity to discover the economic effects of goals in terms of present and future goods and services. While this relationship can be explained verbally, we felt that the verbal explanation would not allow the student the excitement of discovery. We have used situations that call upon them to make some simple computations. Each student is making decisions for a whole society. He is

a planner. Consequently, the learning situations illustrate conditions which are akin to a planned economy, and not the market oriented economy of the United States. It is easier to understand the choice between present and future goods in the context of a planned economy than in a market economy. When the student has discovered the choice at work in the planned orientation, he should be prepared for the third lesson which deals with the conflict between present and future goods in the complex setting of a market economy.

The main objective of the unit is a presentation of the conflict between the desires of a society in terms of present and future goods and services, and not a comparison of planned and market economies. That comparison will be made in later units concerned with Coordination.

B. Sequenced Learning Situations

1. First Situation: The objective of this situation is to have the students recognize that the scarcity of the factors of production forces men to make decisions about what to produce. (Student Materials, page 541)

   a. In order to involve the students in the type of decision-making process which links the concept of scarcity with the decisions about what to produce, we have created an artificial situation. It is artificial only in the sense of arbitrarily reducing the variables to manageable proportions, but it is realistic in terms of the relationship involved.

      Note: In the following illustration we have reduced the quantities involved in order to minimize computations. For example, we will deal with a community of 100 persons rather than a population in the millions and we will deal with only five wants instead of thousands.

   b. Let us think of a community of 100 persons living in an advanced industrial country. Let us further suppose that these people are able to produce food, houses, automobiles, refrigerators, and television sets within their own community.

   c. Now we will give this imaginary community a pile of the factors of production and rather than try to deal with comparisons of dollars, tons, bushels, degrees of skill, etc., we will talk about units of natural resources, units of human resources, units of capital, units of entrepreneurial skill and units of government services.

      Note: This idea of a unit may require some preliminary explanation on the part of the teacher. We suggest that the teacher initiate this lesson with a discussion of units of measurement.

      Suggested introduction to the lesson: The teacher may borrow some pieces of coal, limestone, iron, etc. from the science

department and a set of square blocks. Let the piece of coal represent 50,000 tons of coal which in turn is represented by one block.

= 50,000 =

piece of coal — tons of coal — one block

= 30,000 =

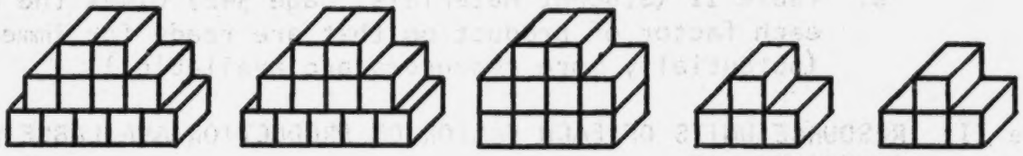
piece of iron — tons of iron — one block

= 40,000 =

plastic figure — man hours of skilled labor — one block

(Additional examples may be given if necessary.)

When we have separated all the resource blocks into five piles representing the factors of production, we are then ready to assign to each factor of production a given number of units.



Natural Resources	Human Resources	Capital Resources	Entrepreneurial Resources	Governmental Resources
Units Ready for Use:				
1,100	1,100	1,000	400	400

d. When the teacher feels that the students are comfortable with the term "unit" of resource, he will refer the students to the following table that appears in the Student Materials, page 542:

Table I: RESOURCE UNITS OF EACH FACTOR OF PRODUCTION REQUIRED FOR INDIVIDUAL ITEMS WANTED

In this imaginary community of 100 persons, in order to produce:	UNITS OF FACTORS OF PRODUCTION REQUIRED				
	Natural Resources	Human Resources	Capital Resources	Entrepren. Resources	Gov't. Resources
one automobile we need →	6	6	3	2	1
one house we need →	15	8	10	3	2
one refrigerator we need →	2	2	1	1	1
one television set we need →	5	12	8	3	1
one year's supply of food for one person we need →	1	4	1	1	1

Note: The choice of these numbers is arbitrary. We are not concerned in this lesson with the precise amounts or quality of the resources involved in the production of the items chosen.

e. Table II (Student Materials, page 542) gives the amounts of each factor of production that are ready for immediate use. (potentially more resources are available.)

Table II: RESOURCE UNITS OF EACH FACTOR OF PRODUCTION AVAILABLE FOR IMMEDIATE USE

FACTORS OF PRODUCTION				
Natural Resources	Human Resources	Capital Resources	Entrepren. Resources	Gov't. Resources
1,100	1,100	1,000	400	400

f. Table II may be thought of as a "resource pile" which sets certain limits on the number of automobiles, houses, refrigerators, television sets, and food that can be produced in the community of 100. Since the resources are scarce, the students must decide which products (goods and services) they want most. The exercise in the Student Materials book asks them to decide which products they want most and how many

of each. Such an ordering is called a "priorities list" by economists.

Example - a student may decide upon the following priority list:

Jack's Priority List

Item of Production	Number of Items Wanted
Automobiles	5
Houses	20
Refrigerators	10
Television Sets	2
Food	100 (Supply of food for a year)

Jack has made a decision for 20 houses, so in order to calculate the amount of the factors of production 20 houses will use, he multiplies 20 by the number of units necessary to produce one house (see Table I). In this case 20 houses would require (15 x 20) 300 units of natural resources. In order to discover if he can satisfy the community's wants with the available factors of production Jack must calculate how many units each item of production will require and then compare his result with the available resources given in Table II. Using the above priority list Jack compiled the following results:

Jack's Priority List		FACTORS OF PRODUCTION REQUIRED				
Consumer Goods	Number Wanted	Natural Resources	Human Resources	Capital Resources	Entrepren. Resources	Gov't. Resources
Automobiles	5	30	30	15	10	5
Houses	20	300	160	200	60	40
Refrigerators	10	20	20	10	10	10
Television Sets	2	10	24	16	6	2
Food	100	100	400	100	100	100
Totals		460	634	341	186	157

He has kept his totals well within the limits of the factors of production available (Table II). Note that he has not

fully utilized the available factors of production, nor does he have to. However, we would say that his decisions have led to an economy operating far below its potential.

g. Another student suggested the following priority list:

Diane's Priority List

Item of Production	Number of Items Wanted
Automobiles	50
Houses	40
Refrigerators	40
Television Sets	50
Food	100 (Supply of food for a year)

This resulted in the consumption of the following amounts of the factors of production:

Diane's Priority List		FACTORS OF PRODUCTION REQUIRED				
Consumer Goods	Number Wanted	Natural Resources	Human Resources	Capital Resources	Entrepren. Resources	Gov't. Resources
Automobiles	50	300	300	150	100	50
Houses	40	600	320	400	120	80
Refrigerators	40	80	80	40	40	40
Television Sets	50	250	600	400	150	50
Food	100	100	400	100	100	100
Totals		1,330	1,700	1,090	510	320

When you compare the total factors of production consumed by Diane's priority list with the available factors of production listed in Table II you will see that it is impossible for the community to produce all the items on her priority list. The scarcity of the factors of production will force her to reduce the amounts of her priority list. The amount of factors of production available controls what goods will be produced. Diane forgot that the factors of production are limited and was unable to satisfy the demands of the priority list.

h. Your own set of values will determine what kind of priorities you will adopt. If you feel that everyone ought to have two cars and two television sets, you will need to cut down on some other items such as food or houses. Remember, too, that your choices must be within the limits set by Table II. The blank forms below will aid you in setting up your priority list for Preston and in calculating the units of factors of production that must be consumed.

Item of Production	Number of Items Wanted
Automobiles	_____
Houses	_____
Refrigerators	_____
Television Sets	_____
Food	_____

You will need to refer to Table I and Table II (Student Materials, page 542) in order to complete your calculations.

Your Priority List		FACTORS OF PRODUCTION REQUIRED				
Consumer Goods	Number Wanted	Natural Resources	Human Resources	Capital Resources	Entrepren. Resources	Gov't. Resources
Automobiles						
Houses						
Refrigerators						
Television Sets						
Food						
Totals						

2. Second Situation: Discussion of Present Versus Future Goods (Student Materials, page 545)

a. This learning situation is directed at the illustration of time and process as part of economic decision-making. It takes the question "What to Produce?" that was introduced in the first lesson and adds to that discussion the time element as part of the decision. If a society is going to survive over a long period of time, it must make some decisions in the present that will provide for future production. The individual may say - "I will consume less today in order

that I will have more next year and also more for my grandchildren." Nations must also think in terms of future production and provide for it in present decisions. However, the desire for increasing future production is counterbalanced by the desire for present consumption.

b. The materials for this lesson are designed to create a situation in which the students will discover the interaction of these conflicting desires for present consumption and for increased future production.

c. The students will use Table I and Table II from the first situation along with Table III and Table IV which are printed at the beginning of the second situation.

d. Table III describes the amounts of each factor of production that must be used for producer's goods. It offers four choices to the student. He may decide to use just enough of the resources for producer goods to replenish the resource pile or he may decide on one of the three choices which result in growth of the resource pile.

e. Table IV describes the amounts of each factor of production that are available for future production in terms of the "Growth Rate" selected by the student in Table III.

Table III: RESOURCE UNITS REQUIRED FOR PRODUCTION OF PRODUCER GOODS AT THE DIFFERENT GROWTH LEVELS

Economic Growth Levels	UNITS OF FACTORS OF PRODUCTION				
	Natural Resources	Human Resources	Capital Resources	Entrepren. Resources	Gov't. Resources
Static 0--no growth; this level just replaces original amount of factors of production	300	100	300	50	50
Growth I--low rate of growth; this level provides a moderate increase in the amount of the factors of production	400	150	450	100	100
Growth II--moderate rate of growth; this level provides a moderate increase in the amount of the factors of production	500	200	600	150	150
Growth III--high rate of growth; this level provides a high increase in the amount of the factors of production	600	250	750	200	200

Table IV shows you the units of factors of production available for future production at any one of the four growth levels during the second twenty year period.

Table IV: RESOURCE UNITS AVAILABLE FOR FUTURE PRODUCTION

If in Table III you chose:	UNITS OF FACTORS OF PRODUCTION				
	Natural Resources	Human Resources	Capital Resources	Entrepren. Resources	Gov't. Resources
Static 0--then for the second period of production you will have →	1,100	1,100	1,000	400	400
Growth I--then for the second period of production you will have →	1,200	1,150	1,450	450	450
Growth II--then for the second period of production you will have →	1,400	1,200	1,600	550	550
Growth III--then for the second period of production you will have →	1,800	1,250	1,750	700	700

f. We will work on the materials for this second situation in the following order:

(1) We will each decide on a priority list as we did in the first situation, but this time we will include producer's goods in our priority list.

(2) The inclusion of producer goods in our priority list means that we must choose one of the levels in Table III (either Static 0, Growth I, Growth II, or Growth III).

(3) We will then subtract the amounts of the factors of production used at the level we have chosen from the original resource pile.

Steve's Priority List
(First Twenty Year Period)

Item of Production	Number of Items Wanted
Consumer Goods	
Automobiles	15
Houses	20
Refrigerators	20
Television Sets	10
Food	100
Producer Goods	Growth I Level

Note: The priority list is based on the use of resources over a twenty year period. If Steve decides to use some of the original resource pile so that he can produce producer goods for Growth I, then he will have to subtract the appropriate amount of resources from the original resource pile before he begins to calculate the amounts used to produce the consumer goods on his list.

Here is how Steve laid out his calculations:

	UNITS OF FACTORS OF PRODUCTION				
	Natural Resources	Human Resources	Capital Resources	Entrepren. Resources	Gov't. Resources
From: Original resource pile	1,100	1,100	1,000	400	400
Subtract: Resource units needed for Growth Level I	- 400	- 150	- 450	- 100	- 100
Result: Resource units available for consumer goods	700	950	550	300	300

Steve used the available factors of production to provide a comfortable standard of living for Preston during the first twenty year period. In addition he made sure enough units of the factors of production were reserved for producer goods so that there would be growth during the second twenty year

period. The number of units Steve used for the production of consumer goods and services in the first period are listed in the following table:

Steve's Priority List		UNITS OF FACTORS OF PRODUCTION				
Consumer Goods	Number Wanted	Natural Resources	Human Resources	Capital Resources	Entrepren. Resources	Gov't. Resources
Automobiles	15	90	90	45	30	15
Houses	20	300	160	200	60	40
Refrigerators	20	40	40	20	20	20
Television Sets	10	50	120	80	30	10
Food	100	100	400	100	100	100
Totals		580	810	445	240	185

g. During the first twenty year period the population of Preston did not remain the same. More people were born than died so that by the time the second period began the population had risen from 100 to 120. This rise in population must be considered carefully in any attempt to plan for future growth.

With a population of 120, Steve decided upon the following priority list for the second twenty year period.

Steve's Priority List
(Second Twenty Year Period)

Item of Production	Number of Items Wanted
Consumer Goods	
Automobiles	20
Houses	10
Refrigerators	20
Television Sets	15
Food	120
Producer Goods	Growth II Level

Using Table IV on the next page, locate the same Growth Level that Steve chose for the first twenty year period.

Table IV: RESOURCE UNITS AVAILABLE FOR FUTURE PRODUCTION

If in Table III you chose:	UNITS OF FACTORS OF PRODUCTION AVAILABLE FOR FUTURE PRODUCTION				
	Natural Resources	Human Resources	Capital Resources	Entrepren. Resources	Gov't. Resources
Static 0--then for the second period of production you will have →	1,100	1,100	1,000	400	400
Growth I-- then for the second period of production you will have →	1,200	1,150	1,450	450	450
Growth II--then for the second period of production you will have →	1,400	1,200	1,600	550	550
Growth III--then for the second period of production you will have →	1,800	1,250	1,750	700	700

Because Steve had chosen the Growth I Level for the production of producer goods during the first twenty year period, we locate the Growth I Level on Table IV to find the amounts of each of the factors of production that are available for use in the second twenty year period.

	UNITS OF FACTORS OF PRODUCTION AVAILABLE*				
	Natural Resources	Human Resources	Capital Resources	Entrepren. Resources	Gov't. Resources
Growth I Level (Chosen in first 20 year period.)	1,200	1,150	1,450	450	450

*Listed in Table IV

Repeating the procedure followed in the first twenty year period, Steve subtracted the amounts he had decided to use for producer goods (in this second period he had decided to use Growth II) from the above listed resource units available.

	UNITS OF FACTORS OF PRODUCTION				
	Natural Resources	Human Resources	Capital Resources	Entrepren. Resources	Gov't. Resources
From: Resulting resource pile[1]	1,200	1,150	1,450	450	450
Subtract: Resource units needed for Growth Level II[2]	- 500	- 200	- 600	- 150	- 150
Result: Resource units available for consumer goods	700	950	850	300	300

1. Listed in Table IV
2. Listed in Table III

Steve's final result is tabulated in the following:

Steve's Priority List Consumer Goods	Number Wanted	UNITS OF FACTORS OF PRODUCTION REQUIRED				
		Natural Resources	Human Resources	Capital Resources	Entrepren. Resources	Gov't. Resources
Automobiles	20	120	120	60	40	20
Houses	10	150	80	100	30	20
Refrigerators	20	40	40	20	20	20
Television Sets	15	75	180	120	45	15
Food	120	120	480	120	120	120
Totals		505	900	420	255	195

Based on his priority list for 120 persons at Growth Level II, this table shows us how Steve utilized the factors of production to satisfy the needs of Preston during the second twenty year period.

In this learning situation you have seen how Steve made his decisions about what Preston should produce. These decisions were not made blindly but were directly related to the factors of production available. While the example of Preston with a population of 100 to 120 is very much simplified compared to a large nation of 180 million, yet the same basic problem

is faced by each: whatever goods and services are produced the choice must take into consideration the available factors of production. The next part of this learning situation will involve you in the decision-making process. What do you want Preston to produce? Follow each step in the decision-making process and remember the factors of production are limited!

h. Summary: The following steps will be completed as the student's work on the materials for this lesson:

(1) Each student will decide on a Priority List for the first twenty year period. The priority list will include producer goods on one of the levels listed in Table III.

(2) The students will then subtract these units of the factors of production (resources) from the original resource pile.

(3) Each student will then multiply his priority list by the number of units required in Table I.

(4) The students may want to adjust their priority list to get maximum use of the resources or if their priority list was too large for the resources available they will have to adjust the priorities downward.

(5) Each student will then decide on a second priority list for the second twenty year period.

(6) They will again subtract the amounts from Table III from the resources available. In this case, however, the resources available will be obtained from Table IV.

(7) The students will multiply their second priority list by the amounts required in Table I and then adjust their priorities if necessary.

These steps are presented in detail in the Student Materials and are included here for the teachers convenience.

i. A discussion in which the students compare the results of their decisions will allow them to get a picture of the outcomes of several alternate patterns without extensive multiplication and charting.

Step 1

Decide on a Priority List.

PRIORITY LIST
(First Twenty Year Period)

Item of Production	Number of Items Wanted
Consumer Goods	
Automobiles	_____
Houses	_____
Refrigerators	_____
Television Sets	_____
Food	_____
Producer Goods	_____

(Decide on one of the Growth Levels for producer goods listed in Table III below.)

Step 2

A. Using Table III find the figure, at the particular Growth Level you have chosen, for the units required from each of the resources.

Table III: RESOURCE UNITS REQUIRED FOR PRODUCTION OF PRODUCER GOODS AT THE DIFFERENT GROWTH LEVELS

	UNITS OF FACTORS OF PRODUCTION				
	Natural Resources	Human Resources	Capital Resources	Entrepren. Resources	Gov't. Resources
Static 0--no growth; this level just replaces original resource pile	300	100	300	50	50
Growth I--low rate of growth; this level provides a moderate increase in the resource pile	400	150	450	100	100
Growth II--moderate rate of growth; this level provides a moderate increase in the resource pile	500	200	600	150	150
Growth III--high rate of growth; this level provides a high increase in the resource pile	600	250	750	200	200

B. Subtract these figures you have just found from the original resource pile (see Table II).

Table II: RESOURCE UNITS AVAILABLE FOR IMMEDIATE USE

UNITS OF FACTORS OF PRODUCTION				
Natural Resources	Human Resources	Capital Resources	Entrepren. Resources	Gov't. Resources
1,100	1,100	1,000	400	400

The problem is set up this way:

	UNITS OF FACTORS OF PRODUCTION				
	Natural Resources	Human Resources	Capital Resources	Entrepren. Resources	Gov't. Resources
From: Original resource pile	1,100	1,100	1,000	400	400
Subtract: Resource units needed for Growth Level chosen	____	____	____	____	____
Result: Resource units available for consumer goods	____	____	____	____	____

(These figures are to be used in Step 4)

Step 3

Taking each item on the priority list that you made,

-multiply the number wanted of that item
-by the number of units required from each of the resources for that item (Table I).

Table I: RESOURCE UNITS REQUIRED FOR INDIVIDUAL ITEMS WANTED

Units needed to produce:	UNITS OF FACTORS OF PRODUCTION				
	Natural Resources	Human Resources	Capital Resources	Entrepren. Resources	Gov't. Resources
one automobile →	6	6	3	2	1
one house →	15	8	10	3	2
one refrigerator →	2	2	1	1	1
one television →	5	12	8	3	1
one year's supply of food for one person →	1	4	1	1	1

The figures you get from that multiplying can be set up in a table as follows:

RESOURCE UNITS REQUIRED FOR ITEMS ON PRIORITY LIST

Consumer Goods	Number Wanted	UNITS OF FACTORS OF PRODUCTION: Natural Resources	Human Resources	Capital Resources	Entrepren. Resources	Gov't. Resources
Automobiles						
Houses						
Refrigerators						
Televison Sets						
Food						
Totals						

Step 4

Compare these totals of resource units required for items on your priority list with the resource units available for consumer goods after the figures for the Growth Level have been subtracted from the original resource pile. (See problem under B, Step 2.)

	UNITS OF FACTORS OF PRODUCTION: Natural Resources	Human Resources	Capital Resources	Entrepren. Resources	Gov't. Resources
Compare: Resource units available for consumer goods	_____	_____	_____	_____	_____
and					
Resource units required for items on Priority List	_____	_____	_____	_____	_____

If resource units required for items on your priority list are less than the resource units available, make whatever changes are needed in your priority list in order to get the maximum use of the resources.

If resource units required for items on your priority list are more than the resources available, make whatever changes are needed to make your list fit the resources available.

Step 5

Make a second priority list for the second twenty year period. Include on it the growth level for producer goods for that period.

PRIORITY LIST
(Second Twenty Year Period)

Item of Production	Number of Items Wanted
Consumer Goods	
Automobiles	_____
Houses	_____
Refrigerators	_____
Television Sets	_____
Food	_____
Producer Goods	_____

(Decide on one of the Growth Levels for producer goods listed in Table IV below.)

Step 6

Using Table IV, locate the same Growth Level that you chose for the first twenty year period.

Table IV: RESOURCE UNITS AVAILABLE FOR FUTURE PRODUCTION

If in Table III you chose:	UNITS OF FACTORS OF PRODUCTION				
	Natural Resources	Human Resources	Capital Resources	Entrepren. Resources	Gov't. Resources
Static 0--then for the second period of production you will have →	1,100	1,100	1,000	400	400
Growth I--then for the second period of production you will have →	1,200	1,150	1,450	450	450
Growth II--then for the second period of production you will have →	1,400	1,200	1,600	550	550
Growth III--then for the second period of production you will have →	1,800	1,250	1,750	700	700

From these figures (the number of units for each of the resources that are available for the second twenty year period), subtract the figures for the Growth Level you have chosen for the second twenty year period (these figures are given in Table III, Step 2).

	UNITS OF FACTORS OF PRODUCTION				
	Natural Resources	Human Resources	Capital Resources	Entrepren. Resources	Gov't. Resources
From: Resource units available for second twenty year period	____	____	____	____	____
Subtract: Resources units needed for Growth Level chosen	____	____	____	____	____
Result: Resource units available for consumer goods for second twenty year period	____	____	____	____	____

Step 7

On your second Priority List (as in Step 3),

-multiply each item on the list
-by the number of units required from each of the resources for that item (see Table I in Step 3).

The figures you get from this multiplying are to be listed in the following table:

RESOURCE UNITS REQUIRED FOR ITEMS ON PRIORITY LIST
(Second Twenty Year Period)

		UNITS OF FACTORS OF PRODUCTION				
Consumer Goods	Number Wanted	Natural Resources	Human Resources	Capital Resources	Entrepren. Resources	Gov't. Resources
Automobiles						
Houses						
Refrigerators						
Television Sets						
Food						
Totals						

Step 8

Compare these totals of resource units required for items on your second priority list with the resource units available for consumer goods for the second twenty year period (find these figures in the problem you worked in Step 6).

	UNITS OF FACTORS OF PRODUCTION				
	Natural Resources	Human Resources	Capital Resources	Entrepren. Resources	Gov't. Resources
Compare: Resource units available for consumer goods for second twenty year period					
and					
Resource units needed for items on Priority List for second twenty year period					

As in Step 4,

If resource units required for items on your second priority list are less than the resource units available for the second twenty year period, make whatever changes are needed in your second priority list in order to get the maximum use of the resources.

If resource units required for items on your second priority list are more than the resources available for the second twenty year period, make whatever changes are needed to make your list fit the resources available.

In this situation emphasis has been placed upon the relationship between producer goods and future economic growth.

3. Third Situation: The Market Economy - a system of signals (Student Materials, page 561)

   a. This discussion is aimed at illustrating how the market economy is actually a social arrangement whereby economic signals pass relatively freely between consumers, retailers, wholesalers, and manufacturers.

Pizza Pie Signals

You pick up a telephone and order a large pizza pie. Within an hour the delivery boy arrives at your door - you pay him $1.25 and enjoy the pizza pie. Simple, you say. Yes, on the surface, but did you ever realize that when you made the decision to buy that pie you set in motion a train of events and communicated a series of messages along the economic line somewhat as you do when dialing a telephone number. Let's follow the sequence and see what happened to your order.

First of all you ordered the pie to satisfy your needs (you were hungry). Immediately, you lifted the telephone (a service supplied by a public utility) and ordered the pie. The clerk who took your order wrote it on a form and passed it through the window to the chief baker. He looked at it - checked to see which of his bakers was least busy and passed it on. The baker proceeded to mix the dough and prepare his oven. Within an hour the pie was ready. The baker put it in a cardboard box; called for a delivery boy and within minutes it was on its way to you. Still simple, you say. Yes, it's still pretty much a process of hitting down one domino and the rest fall. Let's look a little closer though.

Your original order used up electricity, flour, meat, cardboard, etc. Every pie produced means so much more of these things used. If one pie uses one-half pound of flour - 100 such pies means a sack of flour, which means so much grain ground at a mill and an increase in some farmers reaping, irrigating, and planting activities. Every single pie is one part of a larger decision to produce more flour. Every pie bought is in fact a "vote" for the production of more flour. Every pie bought flashes a message which reads: "more flour, more salt, more sausage, more electricity, more gasoline, more labor, more paper" and so on through a long series of requisitions.

Suppose after you ordered the pie the price of gasoline doubled. Your message might come to a screeching halt as the pizza producers considered what to do. To deliver it was going to cost them double now - should they charge you more? They might call you and ask if you still wanted the pie at the increased cost or they might rely on the small print on their advertisement, "We reserve the right to change prices without notice." Another stoppage might occur over shortage of the particular meat you ordered (pepperoni, say). Back would come the message to you, "Are substitutes in order?" If yes, the process of getting the pie baked would continue; if not, your order would die in its tracks - the clerk would tear up the slip - the cook would throw up his hands and you'd still be hungry.

How about a hot dog? Well, that's a different story.

b. After students have read the "Pizza Pie Signals" illustration, ask them to choose two or three products which they want and trace them from the time they appeared as desires to the time they are "consumed" or used.

   (1) How many signals are passed along before the desire becomes a reality?

   (2) Can the students extend the chain of events to include the impact of their wants and needs upon the factors of production?

   (3) What would happen if their particular wants were multiplied by 100? 1,000? 100 million?

c. It may be well to point out that other signals sometimes get into the process (either by accident or design). For instance,

a few years ago a government report issued a few weeks before Thanksgiving caused a slump in the purchase of prepared cranberries. The reason: government scientists sent a signal into the market system which said in effect: "Warning: some cranberry growers have been using an insecticide which might cause cancer." Immediately sales dropped as many people sought substitutes for the traditional red berries, which incidentally sent in signals stimulating the production and sale of substitutes. From the White House came another signal, "The President will eat cranberries with his turkey," but many people still refused to use any of the "condemned" fruit.

Note: A suggested aid in teaching about the market economy is the film "The Role of the Market," No. 1 of a series entitled, "The American Business System," produced by National Educational Television and available from N.E.T. Film Service, Audio-Visual Center, Indiana University, Bloomington, Indiana. The complete transcript for the film is also available as an aid in previewing the film. See also Meno Lovenstein, Capitalism, Communism, Socialism, pp. 47-50, for a concise statement on the chain relationships in the market economy.

SCARCITY AND BASIC ECONOMIC DECISIONS

Unit 4: Allocating the Resources

Part I: Sequenced Outline

I. In Unit 3, the definition of scarcity was extended by showing that the fact of scarcity makes necessary certain basic economic decisions.

A. Also in Unit 3, we examined the first basic decision, What to Produce.

B. Having made that decision, the factors of production (resources) must be moved or the uses shifted so that the chosen goods and services may be produced

The second basic decision, then, is the allocation of resources, meaning the movement or shifting of the factors to new uses. Allocation may mean the worker moving from one job to another or lumber used to make a table rather than a chair or a tool used for one purpose rather than another.

C. The movement or shifting of resources may come from a change in demand, in turn prompted by new fashions or new technology of production.

1. The movement or shifting of the resources is also referred to as the mobility of the factors of production.

2. The degree of mobility also measures the degree of adjustment as resources are shifted from one use to another.

II. The notion of allocation requires us to make some further inquiries.

A. Are the factors of production able to be moved or shifted from one use or employment to another? For example, an unskilled worker cannot do the job expected of a skilled worker. A highly specialized machine may not be usable for another purpose.

B. Are the factors of production willing to move? For example, a worker may not want to leave his favorite city and move to another or may not want to change jobs frequently.

C. Can one factor of production be substituted for another and to what degree? For example, a machine might be able to do the work of three workers. But even if this ratio of substitution were possible, it might not be economically desirable if the total wages of the three workers were less than the cost of the machine for the same work.

D. What institutional arrangements are necessary to assure that the factors of production will be allocated? Will supply and demand

operate to make the allocation? Is there a need for government controls? Should the allocation be planned?

III. In answering the questions we have just raised, we need to understand the role of costs and prices in the allocation of resources.

A. First of all, each factor will have a price, e.g. wages for the workers, rent for land, etc. The price of the factor of production will be the result of the supply (cost) of the factor and the demand for it. Of course, supply and demand meet under a variety of circumstances, sometimes with many suppliers (highly competitive) as in the egg market and sometimes with a single supplier, e.g. the electric power utility or telephone service.

B. The price of a factor is usually influenced by what it could earn in another use. If someone could earn $100 a week for his services, anyone wishing to hire him would have to pay at least $100. This idea of price of a factor being influenced by its opportunity or alternate use is called <u>opportunity</u> <u>or</u> <u>alternative</u> costs. It shows that a continual comparison of uses is going on.

C. Prices, then, are not just price tags. Prices express the <u>evaluation</u> that has been placed upon a factor, good or service. The evaluation is composed of the cost of producing the item and the demand for it (remembering that the demand will include its opportunity or alternate costs).

IV. We know now that <u>prices</u> <u>are</u> <u>evaluations</u> placed upon scarce resources. Then, what social arrangements or institutions may be used so that the allocation will take place according to the first decision, What to Produce.

A. One way is to have competitive bidding for the factor. This method is called the price system or market system; these terms are often used as synonyms for capitalism, since capitalism relies on markets as the basic device for allocation. To illustrate, suppose two manufacturers are competing for leather, one to use it for shoes, the other for wallets. If the value of the leather in wallets is higher than it would be in shoes, the wallet producer would pay a higher price for it. He would outbid the shoe producer and get the leather. Allocation will have taken place by competitive bidding, in a way a kind of auction. The prices would reflect the evaluation of the various uses of the leather.

B. In a planned economy, using the U.S.S.R. as an example, the allocation will be made according to an agreed upon plan.

C. In Units 15 through 17, we will have a fuller discussion of the ways economic systems attempt to assure the allocation of resources. Right now, we are simply pointing out that allocation requires that some way be established for making the allocation.

V. Our discussion so far of allocation covers only some of the major elements involved. Others may be briefly considered.

A. Government influences the allocation of resources.

1. Agricultural price supports and control over plantings affect the allocation of resources.

2. Tariffs are added to the prices of imports and may affect their sales.

3. Immigration laws affect the movement or mobility of labor.

4. Education influences the skills that people may develop.

B. Changing technology greatly influences the allocation of resources, e.g. improved transportation affects the economic use of resources.

C. Conflicts may exist between social and economic goals in the allocation of resources.

1. For economic reasons, as needs change, we may wish to move people quickly from one job to another, but it may be socially bad for children in school to be moved frequently.

2. New skills may be demanded by new jobs, but older workers may not be able to be easily re-trained.

VI. Relation to other disciplines (illustrations)

A. Geography: The location of resources and the availability and costs of transportation will affect the allocation of resources.

B. Sociology: As already indicated, there can be a conflict between an economic "ideal" of rapid mobility and adjustment and the social "ideal" of stability of home life. Also the need for rapid economic change may be in conflict with social traditions and personal habits.

C. Political science: The allocation of resources may be affected by political boundaries of states and nations, e.g. immigration laws, tariffs.

D. Psychology: A worker's willingness to change jobs may depend upon his evaluation of the rewards. Consumer and producer psychology also influences the evaluations placed on the use of the factors of production, e.g. fashion.

SCARCITY AND BASIC ECONOMIC DECISIONS

Unit 4: Allocating the Resources

Part II: Outline of Teaching Suggestions

I. Comments on the Content

A. Problems in teaching the concept

1. The first decision concerned What to Produce; the second could be defined as How to Produce. The notion of "how" includes both allocation (the second basic economic decision) and efficiency (the third basic economic decision). Most texts combine allocation and efficiency and treat them as one decision because they are parts of "how" a society uses its scarce resources. However, it is easier to teach and learn if allocation and efficiency are regarded as separate decisions.

2. Allocation, defined as the movement or shifting of resources, leads us to consider the mobility of the factors of production. Mobility, in turn, helps us to uderstand how a society, by shifting its resources, adjusts to changes in fashion and technology.

3. Similarly, the ability and willingness of the resources to move or be shifted, the possibility and degree of substitution, the nature of prices as evaluations, and the need for an organized way to allocate follow one upon the other as commonsensical elements in the use of resources.

B. The concepts as part of the unfolding structure

1. Scarcity: The decision, What to Produce (Unit 3) faces the need to make choices, but it is still necessary to have a second basic decision concerned with the allocation of the scarce resources.

2. Flows: Decisions about allocation change the direction and the size of the flows of the factors of production.

3. Coordination: The need to make the second basic economic decision, Allocating the Resources, means that a method for coordinating the allocation must be provided.

4. Marginalism: The process of allocation depends upon a continual comparison of the uses of factors and this comparison rests upon the contribution which will be made by an additional unit of labor compared, say, with an additional unit of capital. These comparisons are the basis of prices as evaluations.

5. Institutional factors: Allocation is influenced by government policies, by changes in technology, and by the conflict between social and economic factors. Also, every society must provide a set of institutions for carrying out the allocation, e.g. a market system.

II. Comments on the Learning Process

A. Vocabulary

1. The term "allocation" is an unfamiliar one, but it does contain the notion of "location", which can be helpful in showing that the factors of production must be in the right place.

2. Other new words may be: Mobility, technology, evaluations, but substitute explanatory words may be used for each of them. Evaluation means placing a value on something.

B. Mathematical concepts and skills

1. Opportunity costs, prices as evaluations, and the notion of marginal contributions in substituting one factor for another all make use of <u>comparisons</u>.

2. <u>Comparisons</u> are <u>ratios</u>, e.g. one machine for three workers. Ratios, of course, can be tricky. One must be sure what is being compared, e.g. the output of the workers and the machine or the cost of the workers and the machine or both.

C. Ability to Generalize

1. In making allocation a separate decision under "how", we have shown how a complicated abstraction may be made simpler by dealing with it in parts.

2. Perhaps the two most challenging abstractions are:

a. Prices as evaluations because it converts an object - the price tag - into the result of a process (supply and demand as social evaluation).

b. Mobility as an explanation of adjustment, i.e. the movement or shifting of resources to adjust to changes in fashion or technology.

D. Background

1. Although allocation looks at resource placement from the viewpoint of the whole society, the student can visualize his father changing jobs, etc.

2. Perhaps even more familiar is the notion of new techniques making old tools obsolete.

III. Learning Situations

A. From Teacher to Teacher

Due to the scarcity of the factors of production, almost every society faces four basic economic decisions:

1. What to produce?
2. How to allocate its resources (factors of production)?
3. How to stimulate efficiency of production?
4. How to distribute the output among the members of society?

Unit three dealt with the economic implications of a society's goals concerning - What to Produce? In this unit, a study is made of the relationship between a society's decisions about "What to produce" and what this decision means in terms of allocating its resources. Every change in a society's wants calls for some degree of change in the allocation of society's resources. Some of these resources respond to changing wants more readily than others, that is to say, they are more <u>mobile</u>.

The first learning situation creates a setting that illustrates the changing wants of society and the effect on resource allocation. In the second learning situation, the concept of "mobility of resources" is illustrated by selecting one resource, namely a human resource (persons trained as engineers to be specific) and exploring the ability and willingness of that resource to move. The play, "Man and Mobility", illustrates how prices (salary offers) act as evaluations along with other considerations to determine the mobility of this particular resource. The same forces of ability and willingness operate in the resources categorized in the other four factors of production.

Of course, the coordination system of the economy (whether the economy tends to be market-oriented or planning-oriented) influences the process of allocation. The second learning situation illustrates the process of allocation in a market-oriented economy. Since the allocation problem is at the core of understanding the planned economy, a full treatment is best reserved for later units dealing with Coordination Systems.

As we have said before, there is no specified time requirement for the presentation of these materials. It is not necessary to think of each unit as requiring a week's time. Some units will move more quickly than others.

B. Sequenced Learning Situations

1. First Situation: Changes in demand require changes in the allocation of resources (Student Materials, page 563)

a. In the previous unit on What to Produce we attempted to show in a limited way that decisions about what to produce change over a period of time. (Compare the priorities assigned for the first period of production with those of the second in Unit 3.) New decisions about what to produce usually require new allocations of the resources. This learning situation concentrates on the interrelationship between changing wants, changing decisions about what to produce, and changes in the allocation of resources.

b. The focus of this learning situation can be stated as a series of questions:

(1) What factors influence changes in human wants?

(2) How do these changing human wants effect the decisions about what to produce?

(3) How do these changing decisions about what to produce effect the allocation of resources?

c. We suggest that the following imaginary setting be used to stimulate a discussion:

Scientists have discovered a means for collecting energy from the sun's rays. They have also discovered how to store this energy and release it at will. Technicians have developed the equipment necessary for using this energy to heat homes and drive the generators that produce electricity.

Businessmen have calculated the cost of producing this equipment. If factories are created that can produce fifty thousand solar furnaces per year, the cost of each solar furnace unit will be approximately $1,200 for an average size home under average climatic conditions. Maintenance of such a unit will cost approximately $25 per year. The typical cost of a new furnace of the existing types (coal, oil, gas) for an average home under average climatic conditions is approximately $500 and the cost of fuel and maintenance runs about $200 per year.

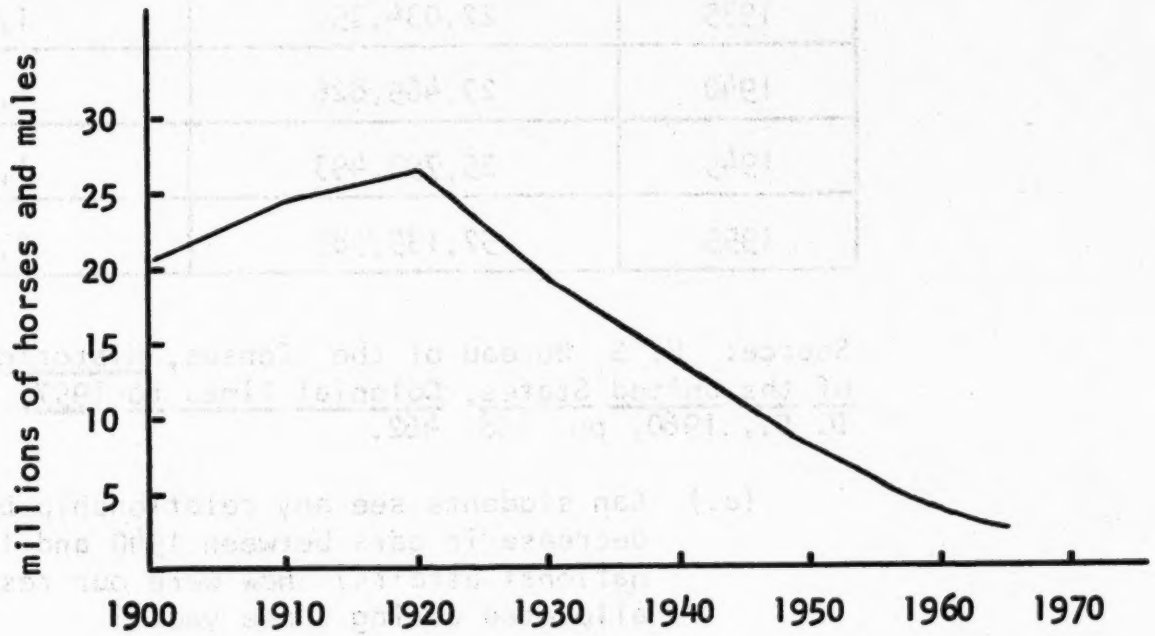
Consumers, we will imagine, will want these new solar furnaces. Some will be bought for installation in new homes under construction and some will be bought as replacements for existing furnaces. At any rate, we will suppose that consumers want at least 50,000 such solar units per year.

d. Discuss how this change in consumer wants will affect decisions about what to produce. In turn, how will these production decisions affect the allocation of resources?

(1) What resources will be needed in increased amounts? (metal alloys, lead, zinc, copper, etc.)

(2) What resources will suffer from decreased demand? (coal, oil, gas, steel, etc.)

e. The influence which an innovation in technology may have on the allocation of various resources is illustrated by the following graph which shows the number of horses and mules on farms in the United States between 1900 and 1960.



Sources: U. S. Bureau of the Census, Historical Statistics of the United States, Colonial Times to 1957, Washington, D. C., 1960, p. 289; and Statistical Abstract of the United States, 1962, Washington, D. C., 1962, p. 673.

f. Have the students speculate on:

(1) The possible causes of such a steady decline.

(2) The impact that this decline could have on the allocation of resources. Possibilities here could include: decrease in feed required; decrease in land used to produce feed; and its use in other ways.

g. Other examples of innovation and its affect upon allocation may be seen in the following:

Table I.

Year	Passenger Cars	Miles of Surfaced Rural Roads
1915	2,332,426	276,000
1925	17,481,001	521,000
1935	22,034,753	1,080,000
1940	27,465,826	1,367,000
1945	25,793,493	1,721,000
1955	52,135,583	2,273,000

Source: U. S. Bureau of the Census, Historical Statistics of the United States, Colonial Times to 1957, Washington, D. C., 1960, pp. 458, 462.

(a.) Can students see any relationship between the decrease in cars between 1940 and 1945 and national affairs? How were our resources being allocated during those years?

(b.) What impact would the building and upkeep of new roads have upon allocation?

Table II.

Year	Passenger Miles (in billions)	
	Air	Railroad
1940	1	19.7
1950	8	26.7
1960	25.3	21

Source: U. S. Bureau of the Census, Historical Statistics of the United States, Colonial Times to 1957, Washington, D. C., 1960, pp. 429-431, 476.

How might this change influence the allocation of human resources?

h. Other possibilities which the teacher may wish to have students explore in relation to their possible impact upon allocation could include:

(1) The growth of the rayon and nylon industry.

(2) The use of farm products for industrial use: wheat in industrial alcohol manufacture; corn in paper, dry ice; flax in cigarette paper; cotton in automobile tires; skim milk in glue, buttons, artificial leather; soybeans in steering wheels, floor tiles, plastics.

(3) The use of coal for dyes, vitamins and sugar substitutes.

2. Second Situation (Student Materials, page 565)

a. In the first learning situation for this unit we discussed some of the changes in the allocation of resources that might result from the demand for solar furnaces. We will attempt in this learning situation to illustrate in more detail some of the complexity involved in shifting resources from one use to another.

b. Some resources shift more readily from one use to another. We learned in Unit 2 that the resources man uses to produce the goods and services he needs and wants can be conveniently grouped under the five factors of production. We can also say that some of the factors of production shift more readily than others from one use to another. So that the illustration will not be unnecessarily complicated we will concentrate on the adjustment process of only one of the factors of production - human resources.

c. The following play is suggested as one possible technique for illustrating some of the details involved in the allocation of human resources.

Man and Mobility

Setting: The action takes place in the offices of two industrial concerns. The recently organized Solar-Furnace Company of Houston, Texas, has advertised for an engineer and Scene I depicts several interviews between the manager of Solar-Furnace Company, Mr. Richards, and four applicants for the position. The fourth applicant, Mr. Corelli, agrees to take the engineering position. Scene II depicts the reaction in the Alpha Electronics Company, from which Mr. Corelli resigned. The only props required are a desk, a table and four chairs, and a box to serve as an intercom.

SCENE I

Scene I opens with Mr. Richards examining papers on his desk. He picks out four papers, speaks to his secretary through the office intercom.

Mr. Richards: Miss Adams, have the applicants arrived?

Pause -
Mr. Richards: Very well, have Mr. Larkins come in first, please.

(Enter Mr. Larkins)

Mr. Richards: How do you do, Mr. Larkins, I am Mr. Richards. Please have a seat.

Mr. Larkins: Good morning, I'm glad you could see me this soon. I really have to make a decision rather quickly regarding my future employment.

Mr. Richards: Well, we're eager to come to a decision too, since we want to start production as quickly as possible. How soon would you be able to move to Houston?

Mr. Larkins: Just as soon as I can wind up my affairs in Little Rock - say about four to five weeks.

Mr. Richards: Fine - in your letter (picks up letter) I noticed that you have had rather wide experience in the electronics field. Where did you get your initial training?

Mr. Larkins: I took both my B.S. and M.S. at Massachusetts Institute of Technology. Incidentally, part of my work was connected with primary research on solar-energy conversion.

Mr. Richards: Yes, I was impressed with that in checking over your credentials. We certainly feel that you would be a valuable addition to our company. While we might not be able to offer you quite as much as you indicated in your application, still I think within a few years the opportunities for a significant increase in salary will be very good.

Mr. Larkins: Exactly what salary did you have in mind?

Mr. Richards: Sixteen thousand dollars, plus a pension plan and the opportunity of buying shares in Solar-Furnace, Inc.

Mr. Larkins: I'm certain your company will do well. However, I'm afraid the salary you offer is not adequate. You see, I'm presently receiving $18,000 and if I remain with McAllister I have a number of favorable financial guarantees.

Mr. Richards: Well, we appreciate your frankness, but if you ever do feel you would like to work with us don't hesitate to contact us.

Mr. Larkins: Thank you. I'm glad to have made your acquaintance.

(Exit Mr. Larkins)

Mr. Richards: Miss Adams, would you please send in one of the other applicants.

(Enter Mr. Lamont)

Mr. Lamont (enthusiastically): I'm Bob Lamont from Ann Arbor, Michigan.

Mr. Richards: Hope you had a good flight, Mr. Lamont. Is this your first visit to Houston?

Mr. Lamont: Yes, but I've been thinking of moving South for several years. My wife's a Southern girl and doesn't like the northern winters. We've been waiting for an opportunity to move but can't afford a reduction in salary.

Mr. Richards: What is your present salary with Carson Steel?

Mr. Lamont: Ten thousand dollars.

Mr. Richards: Well, if you're the right man for this job I'm sure we can improve on that substantially. From your application though I was not quite clear as to your specific qualifications. Could you be a bit more specific about your training and experience?

Mr. Lamont: I took my work at Purdue in chemical engineering and have been with Carson Steel since graduating in 1958.

Mr. Richards: Have you had any experience in energy conversion or structural design?

Mr. Lamont: Not directly, but I have been interested in both areas for a number of years.

Mr. Richards: Hmmmm - as you probably know, our company has just been organized and we do need someone with extensive experience and training in these areas. However, in a year or two when we are in full production we may be able to give you some on the job training. At the present we don't have a place for you.

Mr. Lamont (shaking hands): Thanks anyway.

(Exit Mr. Lamont)

Mr. Richards: Miss Adams, has Mr. Stein arrived yet?

Pause
Mr. Richards: He has a pretty tight schedule so I'll see him right now.

(Enter Mr. Stein)

Mr. Stein: Hello, John, I'm glad you wrote me and gave me your new location.

Mr. Richards: Well, I thought that if you were going to be here I ought to see you. Congratulations by the way. It's not everyone who gets elected to head the National Association of Structural Engineers.

Mr. Stein: Thanks. Now, what was it you had in mind?

Mr. Richards: We're about to get Solar Furnaces under way and while you were down here I thought I'd ask you if you would be interested in heading up our structural design section. I've noticed that you've been doing work along that line with Radiant Heat.

Mr. Stein: Yes, I have. The work in Boston has been especially challenging and I've pretty well set my roots down--haven't really thought about moving. The kids are in college and high school and we've just bought a new home.

Mr. Richards: Well, I know this is a shot in the dark but what would you think of $20,000 as a starter.

Mr. Stein: That's a generous offer and I appreciate your interest in my work. But, John, I just don't want to move.

Mr. Richards: I know how you feel--we're hoping to settle down here in Houston ourselves. Thanks anyway for stopping in.

Mr. Stein (shaking hands): Keep in touch. Give my regards to Mary and the kids.

(Exit Mr. Stein)

Mr. Richards: Miss Adams, I believe there was one more applicant scheduled for this morning. (Pause) Yes, send Mr. Corelli in.

(Enter Mr. Corelli)

Mr. Corelli: Good morning, sir. I'm Anthony Corelli.

Mr. Richards: Pleased to meet you, Mr. Corelli. I'm John Richards. I noticed on your application that you've been working for Alpha Electronics for the last five years. Your specialty is research isn't it?

Mr. Corelli: Yes, but I've come to a point where I'd like to have some experience with the translation of pure research into actual products.

Mr. Richards: Well, you've certainly come to the right place. You realize, of course, that you'd have to move to Houston. I assume from your application that since you are not married this wouldn't be a great problem for you.

Mr. Corelli: That's right. No problem at all.

Mr. Richards: Your qualifications are adequate and since moving is no problem I suppose the only remaining consideration is salary. To come to the point, we can offer you $14,000.

Mr. Corelli: Well--I'm presently receiving $14,000 and although I'm interested in getting the experience of this type of operation, I feel that there would also have to be some financial advantages before I'd consider moving.

Mr. Richards: What would you consider as an adequate increase?

Mr. Corelli: I don't feel that I could move for less than a salary of $16,000.

Mr. Richards: Hmmmm - I'll consider it. How can I get in touch with you if we decide to meet that amount?

Mr. Corelli: I'm staying at the Norfolk Hotel until tomorrow. How soon could I expect a decision since I was planning to leave Houston tomorrow at noon?

Mr. Richards: We will probably come to a decision this evening. If we don't, I'll write you as soon as we do.

Mr. Corelli: That's fine. I'll look forward to hearing from you.

(Exit Mr. Corelli)

CURTAIN ON SCENE I

SCENE II

Mr. Pindar - Manager of Alpha Electronics
Mrs. Samuels - personnel manager of Alpha Electronics
Mr. Brock - production manager of Alpha Electronics
Mr. Fulton - chief accountant of Alpha Electronics

Scene II opens in the office of Mr. Pindar. Mr. Corelli is speaking to Mr. Pindar.

Mr. Corelli: I'm glad you understand my position. I have enjoyed working for you these past few years. It has been a valuable experience.

Mr. Pindar: Well, Tony, we're sorry to lose you but I wish you every success in Texas. Good bye and good luck!

(Shake hands - Exit Mr. Corelli)

Mr. Pindar (speaking into intercom): Susan, please have Mrs. Samuels, Mr. Brock and Mr. Fulton come to my office.

(Enter Samuels and Brock)

Mrs. Samuels: Good morning, Mr. Pindar.

Mr. Brock: Bill will be along in a minute or two.

Mr. Pindar: I have a matter I'd like to have you consider.

(Enter Mr. Fulton)

Mr. Pindar: Hello, Bill, have a chair.

As you probably have heard, Tony Corelli is leaving us. I thought this would be a good time to come to a decision as to whether or not we want to replace him. If we do replace him, should we hire someone to continue the kind of work he was doing or should Mark and Steve handle that end of the research.

Mrs. Samuels: Wouldn't that be putting too much of a load on them?

Mr. Pindar: Well, I thought this might be a good time to purchase that computer service we had talked about. I think the two of them could handle it with the help of a computer.

Mr. Brock: I'm of the same opinion. Besides, we may be able to use the computer to process other production information. Of course, before we decide, we ought to determine whether the demands of our research division are great enough to justify the additional expenditure. It may be that they are not.

Mr. Fulton: Corelli was getting $14,000. Even if we pay a new man $16,000 it would still be much less than the $30,000 per year required to operate a computer.

Mr. Pindar: Mrs. Samuels, what are our chances of getting a man of Corelli's abilities for less than $16,000?

Mrs. Samuels: There are a number of applications on file and I'll look into them for you, but as I recall most of the applicants were rather inexperienced in research. I'd say off hand that it'll be difficult to replace him for less than sixteen thousand.

Mr. Fulton to Mr. Brock: Bob, do you think the cost of a computer would be offset by production gains?

Mr. Brock: Yes, I do. According to my rough calculations the use of a computer twenty hours a week would be worth at least $10,000 a year to us.

Mr. Pindar: For the time being, let's have Mrs. Samuels look for a replacement for Corelli. If, after say a month, we are still unable to find the right man we'll give serious consideration to computer services. Thank you very much for your opinions. (Rising)

(Exit Mrs. Samuels and Mr. Brock)

Mr. Fulton (leaving): I'll have the quarterly report ready for you this afternoon. (Exit)

-END-

d. The foregoing is of necessity a simplified version of the factors involved in the allocation of human resources. It is <u>not</u> a case study but a hypothetical example of what might occur.

To focus student attention upon the factors involved in the allocation of human resources the teacher may wish to stimulate a discussion based on the following questions:

(1) What factors influenced each of the characters in their willingness or unwillingness to become involved in the Solar Furnace Company? (Consideration should be given to such things as: salary, family, experience, personal satisfactions, etc.)

(2) What factors influenced Mr. Richards' choices?

(3) What changes in the allocation of human resources did Mr. Corelli's resignation have on Alpha Electronics?

Note: The stress in the play was upon the problems involved in the allocation of human resources. It illustrated the <u>degree of mobility</u> of each person involved and showed the kinds of problems involved in the shifting of human resources, and the replacement of human resources by machines.

Similar problems are involved in the allocation of other resources such as natural resources, entrepreneurial skills or capital. It is necessary to point out here that mobility does not refer to physical movement alone. An unskilled person who is unable to do the work of a skilled machine operator is immobile. Similarly a machine which has been designed

to produce ball-point pens for instance, will probably be useless if ball bearings are needed. It cannot be easily shifted from one use to another and is as much limited as Mr. Lamont was by his lack of experience.

SCARCITY AND BASIC ECONOMIC DECISIONS

Unit 5: Stimulating Efficiency

Part I: Sequenced Outline

I. In the first basic economic decision, What to Produce, a society has indicated its choices in the use of scarce resources. In the second, Allocating the Resources, the scarce resources have been moved or shifted to fulfill the choices.

A. The third basic economic decision is to use the scarce resources as efficiently as possible, that is, to get as much out of them as possible.

B. More precisely, because the resources are scarce, one wants to get as much <u>output</u> of goods and services as possible out of a given amount of <u>inputs</u> of the factors of production.

1. Stated as a formula, we have:

$$\frac{\text{Output}}{\text{Inputs}} \quad \text{or} \quad \frac{O}{I}$$

2. Because we wish to measure efficiency by comparing a given period with a previous one, the formula should be:

$$\frac{\dfrac{\text{Output}}{\text{Inputs}}}{\dfrac{\text{Output}}{\text{Inputs}}} \quad \frac{\text{Given Year or Period}}{\text{Previous Year or Period}}$$

C. Efficiency is a synonym for productivity.

1. Note, productivity (efficiency) tells <u>how well</u> we are using the scarce resources. Output (simply the production) only tells us <u>how much</u> we produced.

2. The output in one year or period could be compared with output in a previous year or period and we would know if we were producing more or less, but not how efficiently or productively.

D. We know now what efficiency is, what then are the sources of efficiency?

II. A major, perhaps the most familiar source, of efficiency is <u>specialization</u>, often called <u>division of labor</u>.

A. Specialization can be of various types: the world's work can be divided into tasks (farming, fishing, manufacture), or there can be specialized skills (doctor, lawyer, skilled factory worker),

and, of course, geographical specialization (raising coffee, oranges). These types often overlap.

1. A skilled worker saves time and material, both scarce resources.

2. Using the same amount of the factors of production, more oranges can be raised in Florida or California than in Minnesota.

B. An important principle in specialization is comparative advantage. The principle of comparative advantage says that every producer should create the good or service which he can produce with the the greatest advantage or efficiency. In a day's work, then, more goods and services will be produced. By trading, he can acquire the goods and services he did not produce when he specialized. Likewise his partner in trade will have more than he could have produced. An example will be given, in Part II, in the Sequenced Teaching Plans. It will show how both can gain from the specialization.

C. Specialization means mutual dependency, for the "specialists" need each other. Specialization also requires that the specializations be coordinated. The farmer needs the plow and the plow maker needs the farmer.

III. We have already had an introduction to the contribution which real capital (tools and machines) makes to efficiency (see Units 2 and 3). We also know that one source for acquiring the real capital is through saving part of the current income and investing it (buying real capital currently being produced). (See Unit 3.)

A. The definition of real capital was given earlier since it was necessary to see it as one of the factors of production.

B. Also real capital (producer good) represented one of the basic choices, that is, between consumer and producer goods.

C. Now, the concept is re-introduced to show its full significance, namely, as a major source of efficiency.

IV. Nearly everyone is aware that the size of the plant may make a difference in the costs of producing a good. Efficiency attributable to the size of the enterprise is called economies of scale.

A. The size or scale of operation may make possible an increased efficiency for the following reasons:

1. Greater use of real capital than would be so under a smaller scale of operation, e.g. electric tools.

2. Greater use of division of labor, e.g. line assembly production, with each worker performing only a single operation.

3. Other possibilities: buying materials in bulk and at lower prices; research and development; more favorable financing.

B. Scale of enterprise is often referred to as large-scale enterprise. Large-scale enterprise is a dramatic demonstration of the possible gains in efficiency due to scale, but at any size there may be such possible gains attributable to the size of operation, e.g. the cafeteria with the automatic change maker.

V. One major source of efficiency is the motivation.

A. The motivation to be efficient is not present in all societies nor in every human being. It is both a cultural and personal value.

B. The major motive in a capitalist society to stimulate the producer to be efficient is the profit motive. Profits may come from lower costs and also from higher prices. When profits come from lower costs, very likely scarce resources have been used more efficiently.

C. Differences in wages may also be a way to encourage the workers to be more efficient.

D. Honors, prizes, promotions, etc. are other ways for encouraging efficiency.

VI. More and more it is being recognized that the well-springs of efficiency are education, basic or pure science and technology (applied science).

A. Knowing more about nature and human beings helps us to make a more effective use of natural forces and human reactions.

B. Education and science may be goals in themselves, but they are basic to man's capacity to be more efficient in the use of scarce resources.

C. Efficiency, then, originates both in the schools, colleges and university and also in the private and public production of goods and services.

VII. Relation to other disciplines (illustrations)

A. Geography: Territorial division of labor (specialization) is one source of efficiency.

B. Sociology: Improved machines may cause technological unemployment. Those without skills or with unwanted skills still are consumers, have families, etc.

C. Political science: Anti-trust action may be used to stimulate competition and increase efficiency. Sometimes, as in the case of a public utility, it is more efficient to have a single supplier regulated by law.

D. Psychology: Increased efficiency resting upon changing technology means that many persons must face the challenges of re-training; rapidly changing technology means continuous adaptation.

SCARCITY AND BASIC ECONOMIC DECISIONS

Unit 5: Stimulating Efficiency

Part II: Outline of Teaching Suggestions

I. Comments on the Content

A. Problems in teaching the concept

1. Many texts include allocation and efficiency in one decision, namely, "how" to use resources. As already indicated (Unit 4, Part II), allocation and efficiency are treated in this outline as separate decisions because it is easier to teach and learn. Why it is easier will be explained below in the discussion of the abstraction level.

2. Allocation and efficiency are often treated together because they both involve <u>moving</u> and <u>combining</u> the factors of production. Allocation is concerned with the movement of the factors from one employment to another; efficiency implies a shifting and combining of the factors to make the most effective use of them.

3. Allocation and efficiency are not only <u>similar</u> in that both involve movement, they are also <u>related</u>, e.g. the ability of labor to move from one job to another will influence the use of labor in the plant. Also the market price of labor (wages) is related to the costs (labor costs) of the producer.

4. Still, it is easier to understand allocation and efficiency if they are treated separately and then are shown to be similar and related.

B. The concept as part of the unfolding structure

1. Scarcity: Because the factors of production are scarce, it is necessary to make them go as far as possible, that is, to get the greatest output for given inputs.

2. Flows: Increased efficiency makes possible a greater flow of goods and services produced from a given amount of the factors of production. It is a source of economic growth.

3. Coordination: The need to stimulate efficiency means that institutions must be devised to provide the stimulation, e.g. competition, the profit motive, etc.

4. Marginalism: To increase efficiency it is necessary to compare the contribution made by one additional unit of a factor with another. It may increase efficiency to use an additional unit of capital rather than an additional unit of labor.

5. Institutional factors: The motivation about efficiency is a part of the culture and will be influenced by social and political elements, e.g. competitiveness, political action to assure competition, etc.

II. Comments on the Learning Process

A. Vocabulary

1. The term "efficiency" is a familiar one. The phrase "getting the most for the least" makes sense, but a student must be helped to spell out what the words really mean.

2. In this outline, productivity is used as a synonym for efficiency.

3. The term "production" is often used erroneously for "productivity."

B. Mathematical concepts and skills

1. Output and inputs need to be measured or counted, e.g. in units, pounds, man-hours.

2. The notion of marginal contributions is needed to be sure that the factor used contributes more than another, hence, continuous marginal comparisons must be made.

3. Efficiency is a <u>ratio</u> of output to inputs (see Part I).

4. An increase in efficiency is measured as one ratio over another, that is, as a complex fraction. (See Part I.)

5. Measuring gains from scale of enterprise means a change in the denominator (inputs).

C. Ability to Generalize

1. Considering the stimulation of efficiency as a separate decision under "how", makes the task of teaching and learning about efficiency easier.

2. Everyone has a glimpse of what efficiency means and many examples can be found in everyday life. Even the sources of efficiency can be easily demonstrated from familiar experiences.

3. Because examples are so plentiful and so easily understood, it is easier to establish as generalized abstractions such notions as specialization, scale of enterprise, etc.

4. Once understood separately, the similarities and relations of allocation and efficiency can be more easily stated.

D. Background

1. Some elements of efficiency exist in nearly all personal backgrounds.

2. Perhaps less clear would be scale of enterprise and the profit motive, but to an extent both of these can be illustrated from individual experiences.

3. Emphasizing the relation of education, science and technology will make it possible to give a new look to the school.

III. Learning Situations

A. From Teacher to Teacher

Because of the scarcity of the factors of production, almost every society faces four basic economic decisions:

1. What to produce?

2. How to allocate its resources (factors of production)?

3. How to stimulate efficiency of production?

4. How to distribute the production among the members of society?

The economic implications of society's decisions about - What to produce?, were examined in Unit 3. In Unit 4, the relationship between these decisions and the allocation of a society's resources was established. This unit investigates how a society may stimulate the most efficient use of scarce resources.

Economists make an important distinction between the terms "production" and "productivity." The first learning situation illustrates efficiency gains, or to use the new term, "productivity" gains. In the first example the output (production) remains constant while the input is reduced. In the second example the output increased but labor input, in terms of time spent on each unit of output, decreased.

The first example shows productivity gain only, the second example illustrates productivity gains in a situation where production also increases.

The remaining learning situations deal with methods by which a society may stimulate efficiency (i.e., increase its productivity). These methods may be grouped under three general categories for purposes of analysis: 1) specialization, 2) scale of enterprise and 3) motivation.

The most familiar illustration of specialization is the division of labor. The second learning situation begins with an examina-

tion of this form of specialization as it affects efficiency. The concept of absolute advantage is merely an expanded form of division of labor specialization. When we compare two producers, one of which has absolute advantages in the production of two different goods or services, we find that specialization will still lead to productivity gains. In order to understand how specialization in this situation is still advantageous to both producers, it is necessary to introduce the concept of trade in an elementary form. Since the concept of trade is primarily a flows concept, there is no need to develop it in depth at this point.

Scale of production is another method of stimulating efficiency. This method and its limitations are illustrated in the third learning situation. This learning situation also illustrates how science and technology, when applied to production may lead to productivity gains. Another major source of efficiency is the motivation to be efficient. The fourth learning situation is an example in which the psychological questions relating to motivation can be discussed in terms of their economic implications for productivity. In addition, this learning situation illustrates how increased education acts to stimulate efficiency.

B. Sequenced Learning Situations

1. First Situation: Definition of Efficiency (Student Materials, page 573)

a. Introduce this situation by asking students to explain what they think efficiency means. Getting the most for the least is one common way of expressing it. What is meant when one says that "This car is efficient", "That person is efficient" or "So and so operates an efficient business"?

Ask students to decide which they think is most efficient:

a power lawn mower or hand lawn mower
a hand egg beater or an electric mixer
a paint brush or a paint sprayer
a needle and thread or a sewing machine

In each instance have the students explain why they chose the item they did. (In certain circumstances the power tools may be less efficient, so allow students to speculate freely.) Students are likely to give the label of efficiency to those things which get the job done properly and in the least amount of time with least expenditure of labor.

A Matter of Efficiency

Dave was given a new weekend chore. His parents had decided that he ought to do something to help keep the garden neat. He had to cut the front and rear lawns every Saturday during the summer before he could go off with his friends to the swimming pool. Each weekend he dragged the old hand mower out of the garage and began to cut the grass in a haphazard manner. Back and forth across the lawn he went, sometimes having to go over an area two or three times before the grass was short enough. "Gee," he muttered, "why don't we plant concrete and paint it green." At other times he'd think how much better it would be if the mower blades were five feet long -- "a couple of swipes and I'd have it done." Then he'd wonder how he'd ever turn a five foot mower around at the end of each run. It was bad enough turning this one with a 20 inch blade. After the grass was cut he had to rake the clippings and load them into a garbage can. When the job was finished, two and a half hours of his precious Saturday time were gone, but he knew he had to do this before he could go to the swimming pool or to a movie.

On one particular Saturday morning a friend stopped by to wait for him. As Dave rushed to get the job done, Jim suggested that he'd do his job quicker if he'd plan it a little better. Instead of going back and forth across the lawn, he showed him how to go around the whole lawn a strip at a time gradually working in to the middle. "That way," Jim said, "you'll see where you are and you won't have to turn the mower around at the edge of the lawn every few minutes." Dave followed his advice and cut his time to two hours.

The following week he was still concerned about the time he was spending on the lawn so he looked around in the garage for the canvas grass catcher. He found it behind the storm windows. It was almost new -- his father never had used it. "Too much trouble to keep it on," he'd say. Dave tightened up one or two screws and fitted it on to the mower. That morning he cut his time to one and a half hours and didn't forget to let his father know how quickly he was getting the job done. His father seemed quite impressed but then added half seriously, "That's too bad -- you were taking so long to get it done that I had almost decided to buy a power mower. Now that you are so efficient I guess I won't have to."

Dave lost no time in convincing his father that with a power mower he would do the job even faster and it would be so much neater, too. Besides, if they had a power mower he'd earn his pocket money by cutting the neighbors' lawns while they were on vacation. "We'll see about that when the time comes," said his father.

One week later Dave was out early zipping through the grass with the new mower. He didn't even have to rake or dump the cuttings. This new machine cut them up so fine that they could be left on the lawn. He didn't have to push either. With a little gasoline, a yank on the starter and a good straight eye he cut even the longest grass with ease. In 40 minutes the job was complete and as he grabbed his suit and towel he thought, "Good deal! Boy, talk about efficiency!"

b. These questions may be used to stimulate a discussion of efficiency as it relates to Dave's experience:

(1) What was Dave's first thought about improving his efficiency?

(2) If the five foot blade cut three times more grass than the 20 inch blade, why did he decide it wouldn't be such a good idea?

(3) Under what circumstances would a five foot blade be efficient?

(4) What influence did Jim's advice and the attachment of the grass catcher have on Dave's efficiency?

(5) What factors made the power mower more efficient than the hand mower?

(6) Under what circumstances would the hand mower be more efficient than the power mower?

(7) How would Dave define efficiency?

c. The definition of efficiency may be further explored by making some measurements of efficiency. To do this we must know:

(1) the Output - how much goods and services are produced.

(2) the Input - the total cost (in time or money) needed to produce the output.

Efficiency is a comparison between the Output and the Input and is expressed by economists as a formula:

$$\frac{\text{Output}}{\text{Input}} \text{ or } \frac{O}{I}$$

The comparative efficiency of a person, industry or nation at one time may be compared with the efficiency at another time by the following:

$$\frac{\text{Efficiency at a given period or time}}{\text{Efficiency at a previous period or time}}$$

which is actually

$$\frac{\dfrac{\text{Output}}{\text{Input}}}{\dfrac{\text{Output}}{\text{Input}}}$$

With these formulas in mind we may calculate efficiency.

Note: Point out to students that <u>efficiency</u> is a synonym for <u>productivity</u> and refers to how well scarce resources are used. It must not be confused with production (or Output) which is simply a statement of how much goods and services are produced and does not involve a comparison.

d. The following can be used to illustrate how efficiency involves a comparison between outputs and inputs.

Pat volunteered to knit four small scarves for babies for a charity bazaar. She had just learned to knit and was interested in seeing how much more efficient she would be as her scarf project progressed. To do this she kept the following record:

First Scarf

Wool	$1.00
Needles	.75
Pattern	.25
Time (6 hours @ 50¢ per hour)	3.00
Total Input	$5.00

The scarves were tagged to sell at the bazaar for $5.00 each which can be considered the output.

Pat's first scarf took six hours because of her inexperience (she had to rip it out twice and begin over again). When the next attempt was made she benefited from her experience.

Next Three Scarves

Wool	$3.00
*Needles	.75
*Pattern	.25
Time (7 hours @ 50¢ per hour)	3.50
Total Input	$7.50
Output =	$15.00

*For the sake of simplicity we have not included consideration of the depreciation of needles and pattern. A precise attempt at calculating efficiency would take this into consideration. In this instance, however, we are mainly interested in how Pat increased her personal efficiency by experience.

Pat's efficiency may be calculated by using the formula:

$$\frac{\frac{\text{Output for second attempt}}{\text{Input for second attempt}}}{\frac{\text{Output for first attempt}}{\text{Input for first attempt}}} = \frac{\frac{15}{7.5}}{\frac{5}{5}} = \frac{2}{1} = 2.$$

Because of Pat's increased skill at knitting she was twice as efficient in her second attempt than in her first.

2. Second Situation: Specialization (Student Materials, page 575)

   a. The previous learning situation tried to define the concept of efficiency. Students should now be ready to discover some of the means by which efficiency may be stimulated. The second learning situation will deal with the concept of specialization as it serves to stimulate efficiency. Specialization can be divided into three basic types:

      (1) Specialization due to division of labor.

      (2) Specialization due to equal advantage.

      (3) Specialization due to comparative advantage.

   b. Division of labor specialization. This type of specialization may be introduced by discussing with students the process involved in arranging for a school dance. What is the first thing that is done after a decision to have a dance is reached? Committees are organized and certain individuals are usually asked to be responsible for such things as: decorations, orchestra, refreshments, tickets, etc.

      Why is organization necessary? What usually happens when there is no organization or when individuals fail to follow through with their assigned role? Students are probably well aware of what happens when no one takes responsibility or when everyone tries to do everything.

   c. Division of labor specialization may be further dramatized by selecting a group of three or four students to perform a simple function such as producing an advertising circular for a school event (such as a play, dance or concert). Required equipment will include: paper, one stapler, two pens. A short message such as, "You are invited to Attend the School Dance on Friday at 8:30 P.M." will be sufficient for the content of the circular. The circulars should be folded, stapled and addressed by the group.

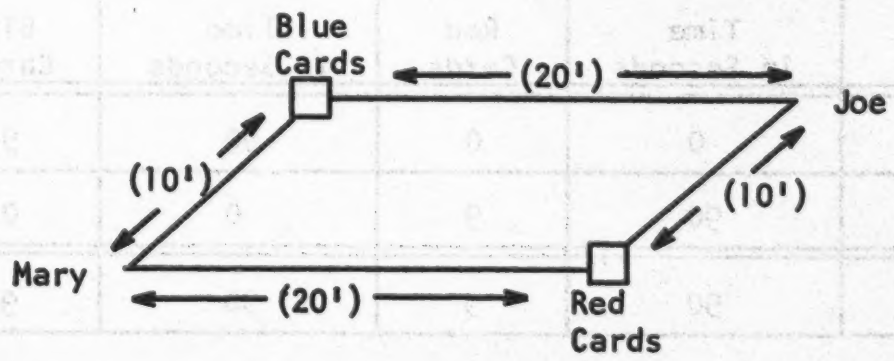
      The teacher may wish to contrast differences in efficiency by allowing every student to write the messages, fold the

circulars and staple them, or by giving a particular task to each of the students. Time the operation in each case allowing two minutes for the task. How many circulars are produced by each method? Can the students devise other ways of producing the circulars so that in a given time of two minutes they can produce more circulars?

d. Before the classroom demonstration of specialization due to equal advantage is given, the teacher can illustrate how this specialization occurs in real production. Oranges can conceivably be raised in both Florida and in Iowa and wheat could also be raised in either state. However, Florida has an equal advantage over Iowa in orange production and Iowa has an equal advantage over Florida in wheat. This is because Florida has ideal conditions for oranges and Iowa has ideal conditions for wheat, while Florida's wheat production and Iowa's orange production are extremely marginal and risky. So if Florida specializes in producing oranges and Iowa in wheat their total production of both commodities will increase because the land which was used for producing marginal crops is now used for producing the crop for which ideal conditions exist. Now if Florida and Iowa can agree to trade, both will be better off because of specialization.

e. Specialization due to equal advantage can be demonstrated through the use of a classroom illustration. Materials needed for this demonstration are two piles of cards of contrasting colors (we have chosen to use red and blue) and two student desks. There is also need for 30 feet to 35 feet of classroom space.

f. In the first part of this demonstration the red cards should be placed on a desk in such a manner that they are 20 feet away from one student (Mary) and 10 feet away from another student (Joe). The blue cards should be on a desk 10 feet from Mary and 20 feet from Joe. The following diagram suggests a simple arrangement for this demonstration:



Note to the teacher: Before putting the demonstration into action, the mathematical explanation of the demonstration should be presented on the chalkboard.

Time for demonstration - 90 seconds. Assume that the average speed that they walk is two feet per second. Each student may pick up only one card at a time and return it to the starting point. They should spend one-third of their time getting cards from the closest pile and two-thirds of their time getting cards from the farthest pile. The results should be approximately as follows:

Table I

Without Specialization					
Name of Student	Time in Seconds	Red Cards	Time in Seconds	Blue Cards	Total Red & Blue Cards
Mary	60	3	30	3	6
Joe	30	3	60	3	6
Totals	90	6	90	6	12

This demonstrates the "production" which is possible without specialization. Note that the total output is twelve red and twelve blue cards.

Suppose now that Mary gets only blue cards and Joe gets only red cards using the same amount of time (90 seconds). This is what should happen:

Table II

With Specialization					
Name of Student	Time in Seconds	Red Cards	Time in Seconds	Blue Cards	Total Red & Blue Cards
Mary	0	0	90	9	9
Joe	90	9	0	0	9
Totals	90	9	90	9	18

Specialization, in this case due to equal absolute advantage, has increased "production" by six red and six blue cards.

g. Select two students to perform the experiment. Due to variations in their walking speeds, the results of the actual experiment may be slightly different than the idealized mathematical calculation. However, if the students do not take their roles in the experiment seriously, they may create a large discrepancy and distort the concept for the class.

h. Two additional students might be selected to serve as tabulators and another student will time the operations. A third table (illustrated below) should be prepared on the chalkboard alongside of the previous tables. As the experiment proceeds, the results can be tabulated directly on this table.

Table III

Without Specialization					
Name of Student	Time in Seconds	Red Output	Time in Seconds	Blue Output	Total Red & Blue Output
	60		30		
	30		60		
Totals	90		90		

Table IV

With Specialization					
Name of Student	Time in Seconds	Red Output	Time in Seconds	Blue Output	Total Red & Blue Output
	0		90		
	90		0		
Totals	90		90		

i. The gains due to specialization are easily seen in the above example where each producer has an equal advantage in producing one of the two products. It is more difficult to visualize gains from specialization when <u>one</u> of the producers has an advantage in producing both products. For example:

For several years the Kingsley Corporation operated two plants in Springfield and Yonkers. Both plants produced electric irons and toasters. The following chart shows the typical yearly production for both plants:

Plant	Electric Irons Produced	Time Spent	Electric Toasters Produced	Time Spent
Springfield	6,000	1/3 year	8,000	2/3 year
Yonkers	4,000	1/3 year	4,000	2/3 year
Totals	10,000	2/3 year	12,000	1 1/3 year

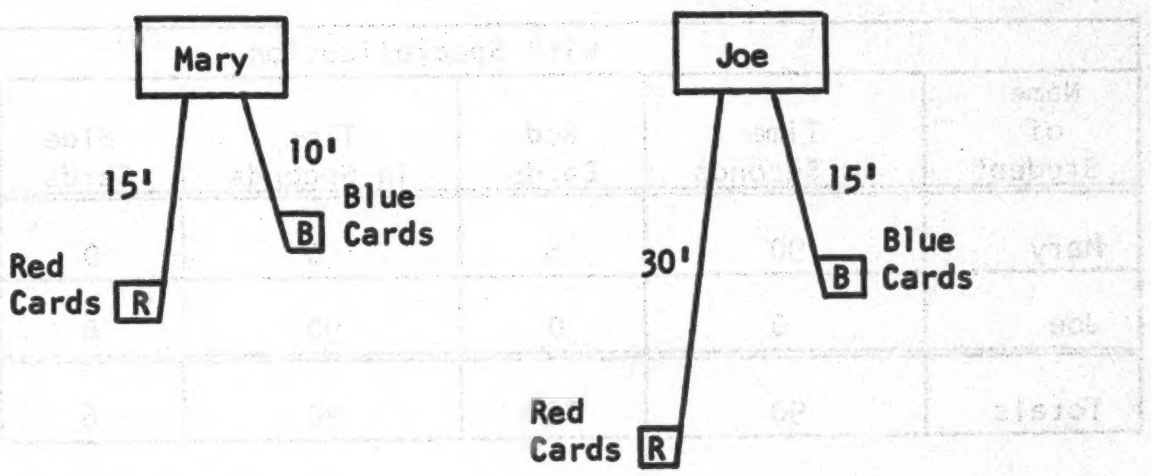
The corporation's economist suggested that production could be increased if both plants specialized. Which plant should specialize in producing irons and which plant should specialize in producing toasters? You can see that the Springfield plant was more efficient than the Yonkers plant in the production of both irons and toasters. For every four irons produced by the Yonkers plant the Springfield plant turned out six irons over the same period of time (one-third of a year) and for every four toasters made at the Yonkers plant the Springfield plant produced eight in the same time period (two-thirds of a year). Consequently, the economist concluded that the Springfield plant should spend the whole year specializing in the production of toasters where they had a two to one advantage, and that the Yonkers plant should produce only irons because in producing irons they had the least comparative disadvantage (six to four or, reducing this to lowest terms, three to two). The production of the two plants showed these results under the new production program.

Plant	Electric Irons Produced	Time Spent	Electric Toasters Produced	Time Spent
Springfield	0	0	12,000	1 year
Yonkers	12,000	1 year	0	0
Totals	12,000	1 year	12,000	1 year

Thus specialization in terms of comparative advantage resulted in a productivity gain of 2,000 electric irons.

j. The next demonstration illustrates productivity gains due to specialization when a comparative advantage exists for <u>one</u> producer <u>over</u> <u>another</u>. It is similar to the experiment used previously to show gains due to specialization in terms of inherent advantage. Again, we will assume that Mary and Joe both want blue cards as much as red cards and that the walking speed (the intensity of labor) remains constant. The classroom setup for the experiment is given on the next page:

Classroom Setup



From the diagram above Mary has a comparative advantage in production of both red and blue cards.

Without specialization: If each of the participants spends one-third of his time getting blue cards and two-thirds of his time getting red cards during a 90 second time period the results will be as follows:

Table V

Without Specialization					
Name of Student	Time in Seconds	Red Cards	Time in Seconds	Blue Cards	Total Red & Blue Cards
Mary	60	4	30	3	7
Joe	60	2	30	2	4
Totals	120	6	60	5	11

With specialization: If both red and blue cards are equally desired, then the highest total production of both would be most desirable. If Mary spends all her time getting red cards and Joe spends all his getting blue cards the following will result:

Table VI

With Specialization					
Name of Student	Time in Seconds	Red Cards	Time in Seconds	Blue Cards	Total Red & Blue Cards
Mary	90	6	0	0	6
Joe	0	0	90	6	6
Totals	90	6	90	6	12

k. Tables V and VI show the mathematical model for calculating the gains due to specialization. These should be placed on the chalkboard and explained prior to the experiment. The tables indicate a gain of two blue cards with no reduction in the production of red cards.

l. For the experiment, select two students to take the roles of Joe and Mary. Also select a time keeper. The blank Tables VII and VIII given below should be placed alongside of Tables V and VI on the chalkboard before the experiment begins if tabulation is to be done at the board. Again, space for tabulation by individual students is provided in the Student Materials. Tables VII and VIII illustrate the blank tables that are found in the Student Materials.

Table VII

Without Specialization					
Name of Student	Time in Seconds	Red Output	Time in Seconds	Blue Output	Total Red & Blue Output
	60		30		
	30		60		
Totals	90		90		

Table VIII

With Specialization					
Name of Student	Time in Seconds	Red Output	Time in Seconds	Blue Output	Total Red & Blue Output
	0		90		
	90		0		
Totals	90		90		

m. Tables V and VI indicate that mathematically the result of specialization will in this case produce one additional blue card with no reduction in red card production. Compare the results of the experiment (Tables VII and VIII) with the mathematical predictions. If a discrepancy exists, what factors might be responsible for the differences?

n. The last demonstration raises a question about the problems of trade between two specialized producers. Specialization will not take place unless both producers can reach a satisfactory agreement on the terms of trade. The problem of finding a basis of trade is usually complicated by non-economic considerations, or as in the case of international trade by more complex economic relationships. At this point, we want to examine only the fundamental economic relationship involved in trade. For this reason we will assume that Joe and Mary are both interested in obtaining the largest possible share of the total production and that no other considerations will influence the terms of trade.

Since the total output of reds was not increased with specialization, both Mary and Joe will want to receive at least the same number of reds with specialization as they had without specialization:

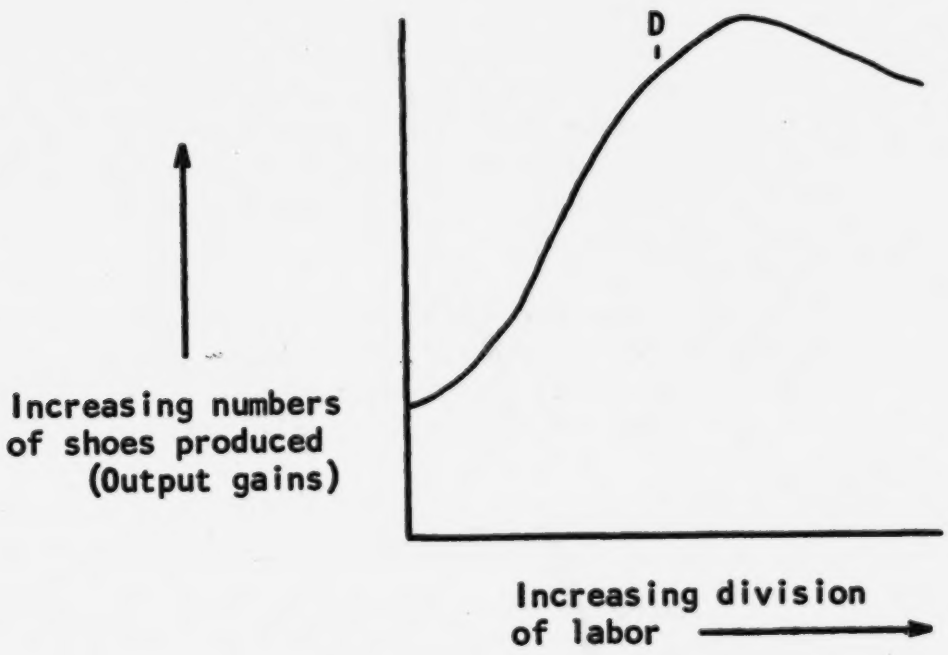
	Red Cards Without Specialization	With Specialization and Trade
Mary	4	4
Joe	2	2

Specialization resulted in the production of one additional blue card. If Mary and Joe each receive one-half of the additional blue card, the resulting distribution of blue cards will be:

	Blue Cards Without Specialization	With Specialization
Mary	3	3 1/2
Joe	2	2 1/2

With specialization Mary produced all the red cards (six of them) and Joe produced all the blue cards (six of them). Mary will keep four red cards for herself and trade two red cards to Joe. Joe will keep two and one-half blue cards (one-half more than he had without specialization) and trade three and one-half blue cards to Mary. The trade is then two red cards for three and one-half blue cards, or, to put it another way, one red card is worth one and three quarters blue cards. The class can take the output figures that resulted from their experiment (tables seven and eight) and calculate the terms of trade based on their statistics either as a classwork or homework assignment.

o. In all the examples given in this learning situation, specialization has resulted in productivity gains. In actual production, however, specialization has its limitations. On the blackboard, the teacher can show that in a shoe factory, for example, output gains rise steadily with increasing division of labor up to a point where they level off and eventually decline.



Students may be asked to account for the decline in output after the point D is reached. Or, to ask the question in another way, how would they account for the fact that specialization of labor (increasing division of labor) resulted in output gains up to point D but not beyond that point?

3. Third Situation: Gains in Efficiency from Scale of Production (Student Materials, page 577)

   a. Another source of efficiency or productivity is the size or scale of operation. An excellent example of how scale of operation led to more efficiency is the Ford Motor Company which began as the Detroit Automobile Company in 1899 when Henry Ford had accumulated enough money and skill to begin the manufacture of automobiles. In the <u>two years</u> of its existence this company produced <u>twenty cars</u>. Why? This description gives the answer.

The First Fords

"The men assembled the motors on a bench. The frame of the car was then placed on wooden horses, and the motor, transmission, springs, and axles were installed. This furnished a complete chassis; wheels were then attached, and finally the body (that is, sides, seats, cushions, dash, and so on) was assembled. . .An immense amount of detailed hand work was involved, with much alteration or repair of parts that did not fit, and much drilling, riveting, and bolting. The number of items to be separately adjusted -- exhaust, muffler, tail pipes, brake rods, wheels, tires, levers, dashboard, windshield, horns, fenders, steps, and so on -- seemed staggering. The marvel is that any of these elaborate early carriages got put together correctly, and, with all their bolts, rivets, screws, and other vulnerable connections, proved durable as day-in-and-day-out conveyances."[1]

It took almost three months to assemble one car! One of the reasons for the company's failure was that the car was too expensive to produce and too few people could buy it. In 1908, however, Ford had so organized the techniques of mass production as to be able to produce the Model T (which for nineteen years was Ford's major product) and sell it at a lower price than other cars. As production increased and the company became more efficient the price of the Model T fell from $809 in 1908 to $380 in 1926.

Profits were used to expand facilities which led to still greater productivity. Large scale purchases of raw materials and parts decreased the cost of these items thus allowing more money to be used for expansion. Assembly plants were set up in various parts of the country cutting the cost of transporting complete automobiles. By 1914 the moving assembly line was in operation. All these innovations increased the efficiency

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[1]Allan Nevins, <u>Ford</u>: <u>The Times</u>, <u>The Man</u>, <u>The Company</u>, (New York: Charles Scribner's Sons, 1954), 184 ff. Reproduced by permission.

of Ford Motor Company and its production of automobiles rose from 20 in 1900 to 8,000 in 1907 and 250,000 in 1914![2]

b. Students should be warned that scale of enterprise is only one factor and that by itself it is not enough to stimulate greater efficiency. Some may infer that a company which keeps getting larger will automatically become more efficient. This is not so. Remember Dave's five foot lawn mower? A simple analogy may help at this point: Suppose you are given the job of raking leaves and you have a choice between two rakes - one 20" wide and another 40" - and you are supposed to have the job completed in thirty minutes. At first you may feel that the large rake would get the job done faster and more efficiently. This may be true. However, if the 40" rake is difficult to handle and maneuver it is quite possible that its increased size and weight could be a distinct disadvantage. Imagine how inefficient a 100" rake would be! We see, therefore, in terms of efficiency, scale of enterprise has its limitations.

4. Fourth Situation: Motivation to be efficient (Student Materials, page 578)

a. In the previous situations we attempted to define efficiency as the use of scarce resources so that we get as much out of them as possible. It was also shown how specialization and scale of production may stimulate the most efficient use of resources. This fourth learning situation deals with the question: "Why should people care about being efficient?"

b. Without expecting students to give a sophisticated psychological answer to the question, the teacher may ask them to examine some of their own reasons for being efficient in performing some task.

What made Dave (in the First Learning Situation) care about efficiency?

(1) Pride in workmanship?
(2) Desire to get father's approval?
(3) Desire to join his buddies at the pool?

Which tasks do students complete more efficiently? Why are they more efficient in one instance than in another?

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[2]A detailed account of the Ford Motor Company may be found in Casebook in Business History and Economic Concepts for use in Secondary Schools, edited by Ralph W. Hidy and Paul E. Cawein, Copyright 1965 by the City of Newton, Massachusetts.

c. Motivation for being efficient is not easily determined, but students may be able to get some notion of the factors involved by reacting to the following situation:

Bill and Don operate lathes in an automobile parts factory. They produce the same type of parts, work an equal number of hours and are paid on the number of finished parts they produce.

Each month the production manager indicates on a chart the productivity of each worker. The chart shows that Bill is consistently ahead of Don as far as productivity is concerned. The owner of the factory asks the production manager for an explanation of the difference between the two workers. How would you explain it?

To elicit responses from the students the teacher may have them form small "brain storming" groups whose purpose is to come up with as many answers as possible on the information given regarding Bill and Don. This is pure speculation so students should be encouraged to range wide in their search for some possible answers to the question raised by the manager: Why should one man care about being more efficient than another?

Answers might include:

(1) Bill is married and needs more money.

(2) Don took the job because he could find nothing better.

(3) Bill is on a higher pay scale than Don.

(4) Don lacks experience.

(5) Bill's machine has modern features.

(6) Don has been at the job so long that he has lost interest in it--he only does enough to get by.

(7) Bill has had more education and training than Don.

(8) Bill gets a feeling of satisfaction out of competition.

(9) Don's family and friends are not interested in efficiency.

Note: It is not the intention of this learning situation to analyze all possible reasons why some people care more about efficiency than others. However, some general reasons may be derived from the class discussion and may

include such things as education, personal values, and the profit motive, all of which contribute to stimulation of efficiency.

SCARCITY AND BASIC ECONOMIC DECISIONS

Unit 6: Dividing the Goods and Services

Part I: Sequenced Outline

I. We have examined now three of the basic decisions which must be made because resources are scarce: What to Produce, How to Allocate the Resources, and How to Stimulate Efficiency in the use of the resources.

A. The fourth basic economic decision is to determine how the goods and services will be divided among consumers, businesses, and other users. Scarcity applies both to the goods and services and the factors of production out of which they are created.

B. Every society must have some arrangement for making the decision about how to share the goods and services.

C. Three major ways that goods and services may be shared are:

1. Equally, that is, each person gets the same amount, e.g. sharing the facilities in the school room.

2. By status, meaning that one's social or political position would determine the order and amount of goods and services an individual might get, e.g. the prince and the pauper.

3. By the ability and willingness to buy, that is, the consumer or business, through its "dollar votes" competes with other consumers or businesses, the goods and services going to the highest bidder.

D. All three principles are at work in our society. A capitalist economy relies mainly on competitive bidding among consumers, among businesses, etc. as the basic arrangement for dividing the goods and services.

1. In a socialist society, a larger segment of the output is devoted to collective consumption and then may be divided equally, e.g. fully socialized medicine made available equally to all persons.

2. In the U.S.S.R., planning determines how much of the total output will be consumers' goods and services; some goods and services, e.g. medical services, are distributed equally per person; in the stores, goods and services are divided among those able and willing to pay more.

II. We must further explore the meaning of the words "able" and "willing."

A. A buyer's ability to buy depends upon the sources and amount of money or credit he may have.

1. Income is earned by each of the factors of production for its contribution in the creation of goods and services.

   a. Wages are paid for labor, rent for land, interest for capital, profits for the entrepreneur, and revenue for government.

   b. Economists call these payments distribution or the distribution of income.

2. Credit may be a charge account or bank loan for the individual, a bank loan or the issuing of bonds by a corporation, etc.

B. A buyer's willingness to buy depends upon the various factors influencing his desire to purchase.

C. Each individual buyer will have his purchase influenced by his ability and willingness to buy, but it is helpful to group the buyers into four major categories and examine each in terms of its ability and willingness.

	Able	Willing
Consumers	(See discussion	in III below)
Business	(See discussion	in IV below)
Government	(See discussion	in IV below)
Foreigners	(See discussion	in IV below)

III. The consumer buys the largest proportion of the nation's output and is, of course, the most familiar group.

   A. The ability to buy is determined by the differences in income and the capacity to borrow.

      1. Data is available showing how the income is distributed in the U. S. A table is included in the Student's Workbook. The data can be found in the Statistical Abstract of the U. S., in the section on "Income, Expenditures, and Wealth."

      2. The capacity to borrow is related to income. Data on consumer credit can be dound in the Federal Reserve Bulletin, and the Survey of Current Business.

   B. The willingness of consumers to buy will be influenced by custom and traditions, by advertising, and by individual differences in tastes.

      1. A basic influence is one that economists call diminishing marginal utility. Utility simply means the pleasure a good

or service yields. Marginal means the amount of pleasure provided by the last unit. Diminishing means that a second unit would yield less pleasure than the first, a third less than the second, etc.

2. Of course, translated into money, it is assumed that a person would be willing to pay less for a second ice cream cone than for the first, if the payment depended only on the pleasure or utility he would get.

IV. The ability and willingness of business, government and foreigners to buy may be briefly summarized.

A. The businessman:

1. Ability to buy depends on the amount of money capital he has or can acquire, how much profit he can retain in the business, and his credit.

2. Willingness depends on the prospects for the economy, his own industry or his own business. If they are good he will buy more inventories, build more factories, etc.

B. Government:

1. Ability to buy depends upon the receipts from taxes and borrowing. Government, remember, includes federal, state, and local levels of government.

2. Willingness to buy depends on the decisions which citizens make through the Congress, legislatures and councils about the kinds and amounts of goods and services they wish to buy through governments, e.g. defense, highways, schools.

C. Foreigners:

1. Ability of foreigners to buy depends on their capacity to earn American dollars, obtain credit or receive gifts. This part of the story will be told in greater detail in Unit 14 on International Trade. An illustration may, however, be helpful at this point. When we buy goods and services from a foreign nation (imports), they acquire the means of buying American goods and services.

2. Willingness? Of course, foreigners are either consumers, businesses, or governments. Their motives in buying, therefore, will be those of consumers, businesses, or governments.

V. Some further comments on how goods and services are divided need to be made.

A. We do not always acquire our ability to buy by furnishing a resource and getting paid for it. An appreciable amount of the ability comes from the re-distribution of income.

1. Examples, at the national level, are the Transfer Payments, e.g. social security payments.

2. It may happen that the cost of educating a child is greater than the amount the parents have paid in taxes. The service of education, over and above taxes paid, is additional "income" to the individual.

B. Differences in the incomes of individuals and families may be due to a variety of reasons.

1. Ability, training and education

2. Inherited wealth

3. Loss of income due to age or illness

4. Inability to obtain a job because of an insufficient demand for labor or labor of a certain kind.

VI. Relation to other disciplines (illustrations)

A. Geography: The willingness of consumers to spend may depend upon the weather, the seasons; the ability of farmers to buy may depend upon the quantity and quality of their crops.

B. Sociology: Consumer purchases are often influenced by family needs and wants; similarly for community demands.

C. Political science: Government's economic role, in a market economy, includes many activities affecting consumers, businesses, government's own purchases, and international trade.

D. Psychology: The purchases of each of the four buyers are influenced by psychological factors affecting their choices, e.g. diminishing marginal utility for consumer goods and services.

SCARCITY AND BASIC ECONOMIC DECISIONS

Unit 6: Dividing the Goods and Services

Part II: Outline of Teaching Suggestions

I. Comments on the Content

A. Problems in teaching the concept

1. The sharing of scarce goods and services among consumers, businesses, etc. is, perhaps, one of the most familiar economic problems.

   a. Yet economists do not have a satisfactory analysis of "how" and "why" goods and services are divided as they are. Both ability and willingness are difficult to analyze.

   b. One theory about ability to earn is that a factor of production is paid according to its contribution (more precisely, according to the marginal productivity of the factor). Does this mean that a movie actor contributes more than a scientist? To say the movie actor must contribute more since he is paid more is hardly an explanation.

   c. Another theory about ability rests upon the bargaining power of the factor of production. For example, collective bargaining could improve the worker's ability to earn more; a monopolist could improve his ability to buy by charging more for his product.

   d. Willingness, too, is a complicated social and psychological fact. We may start from differences in taste, but how shall we account for them? One person may save more than another out of his income or out of an addition to his income.

2. Yet with such qualifications in mind, the principle of competitive bidding among consumers, businesses, and governments, based on ability and willingness, does explain a major part of the division of goods and services in a market or capitalist economy.

3. Often the second decision, Allocating the Resources, is confused with the fourth decision, Dividing the Goods and Services.

   a. The two decisions are related, i.e. consumer choices will determine what uses we make of resources.

   b. However, in the second decision, the problem is the allocation of resources out of which goods and services are created, and in the fourth decision we are concerned with the division of the resulting goods and services, e.g. among consumers.

B. The concept as part of the unfolding structure

1. Scarcity: The goods and services, created out of scarce factors of production, are scarce, too.

2. Flows: The flow of goods and services may be divided into four streams, those meant for consumers, businesses, government and foreigners. This is a first division. The streams also can be divided.

3. Coordination: Competitive bidding by those able and willing is one arrangement for coordinating the division of goods and services.

4. Marginalism: Each of the buyers will compare the purchase of an additional (marginal) unit of a good or service against the utility of some other good or service; also, the utility of the additional (marginal) unit will be compared with that of the previous unit.

5. Institutional factors: Institutional factors will affect the ability to earn (e.g. educational opportunity), the willingness to spend (e.g. advertising), and the techniques the society uses for dividing goods and services (e.g. competitive bidding among consumers).

II. Comments on the Learning Process

A. Vocabulary

1. The using up of goods and services is usually called consumption. However, our analysis shows that we must consider four types of buyers or "consumers."

2. The word government suggests to most people the Federal Government only, but in economics the term applies to all levels of "government": federal, state, and local.

3. The word distribution is used in several senses in economics. Usually it refers to the distribution of income, but it also is used as a synonym for marketing (i.e. wholesaling and retailing).

B. Mathematical concepts and skills

1. The notion of diminishing marginal utility can be graphed either to show the pleasure from each additional unit or the decreasing amounts added by each additional unit to the total pleasure or total utility.

2. Data on income are broken down into categories which are called income brackets.

3. Certain statistical terms are used, e.g. mean, median, etc.

4. In the graphs for consumer credit, plotted data is added to plotted data. The student needs to know how to add graphed data.

C. Ability to generalize

1. The problem of abstraction in dealing with the division of the goods and services is that most people think only of the consumers and fail to generalize the problem, to include all four buyers.

2. Ability and willingness are generalized elements affecting all four buyers.

D. Background: While students have usually not had direct experience in business, in government, or as foreigners, it is possible to show them that they have actually had "mock" business experience (e.g. buying stationery for school work), have shared in government decisions (e.g. playgrounds), and they are "foreigners" to others (e.g. importing chocolate).

III. Learning Situations

A. From Teacher to Teacher

The three previous units have discussed the basic economic decisions of What to Produce, How to Allocate the Resources, and How to Stimulate Efficiency? The next decision is, "How will the goods and services be divided among the consumers?" This unit explores this fourth basic economic decision faced by every society.

The description of an imaginary County Fair in the first learning situation creates a setting in which the three major ways of distributing goods and services are illustrated. It is important that emphasis be placed on the fact that in almost all societies all three forms of distribution are present in some degree. One society may use one form more than the others, but it is misleading to exaggerate these differences in degree of use in the interest of simplification. More will be said on this topic when we reach the units on Coordination Systems.

The concept of distribution according to ability and willingness to buy requires careful examination of the interrelationship between ability and willingness. The second learning situation is based on the assumption that income (ability) is an <u>independent variable</u> and that willingness is a <u>dependent variable</u>. As income changes it influences the willingness of persons to buy. In this case, income is the independent variable and willingness to buy the dependent variable. At first, one may feel that this relationship is obvious, but when you begin to ask what amount of income change causes what degree of change in willingness to buy, the complexity of the

relationship becomes apparent. The situation presented in the Student Materials introduces the students to this more sophisticated form of the concept.

The third learning situation treats the special case of businessmen as consumers in a market-oriented economy. The general concept of ability and willingness operates also for businessmen as consumers, but the qualifications on the general concept deserve special treatment. Foreigners and government as consumers are discussed in later units.

B. Sequenced Learning Situations

1. First Situation: Ways of Dividing Goods and Services Among Consumers (Student Materials, page 581)

a. The previous units explored the processes by which a society decides what goods and services it wants to produce and how these decisions affected the allocation of its resources. Unit 5 explained how a society could make the most efficient use of its resources. All of these decisions were influenced by scarcity. The fourth basic economic decision, concerning the distribution of the goods and services, is also influenced by scarcity: Which members of society will get what goods and services?

b. In some cases a society may decide to distribute certain goods and services <u>equally</u> among all members of society. Examples of this type of distribution in our society are the services of public school education for all children and police protection for all citizens. In other cases, a society may decide to distribute certain goods and services according to the <u>status</u> of individuals in the society. In our society one example of this type of distribution is found in the armed forces where officers receive superior living quarters than other servicemen. In some other societies, kings, chiefs, sheiks, medicine men receive a larger than average share of goods and services merely because of their status in the society. A society may also decide to distribute certain goods and services on the basis of competitive bidding between the members of the society. In this case, the <u>ability</u> and <u>willingness</u> of the consumers determines who gets what goods and services.

c. The description of a County Fair that follows contains examples of these three types of distribution. The students should read it carefully, then list examples of each type of distribution in the form provided under the passage. (One example of each has been given for the teacher.)

Leland County Fair

In 1926 the Leland County Fair Association was formed by 150 interested residents of the county. These charter members purchased land and erected permanent buildings at Reston, approximately in the center of the county. They wanted a fair each year where people could come and see the agricultural and industrial products of the county and enjoy themselves with refreshments and amusements at the same time. By 1942, the Leland Fair had become so prosperous that the Board of Directors decided to abolish the admission fee of fifty cents. This made it possible for persons to enjoy the frequent band concerts and the agricultural and industrial exhibits free of charge. Even the seats in the grandstand for the numerous horse races and shows could be purchased for as little as $1. Of course, there were better seats at $3 and $5. The best grandstand seats were reserved for the county government officials and their families. Each of the charter members also received four excellent reserved seats nearby. Hundreds of small amusement and refreshment stands lined the streets of the fairgrounds. Ferris wheels, caterpillars, electric bump-cars, and all kinds of novel and exciting rides were erected during fair week for those who had the courage and the money to enjoy them. In a week's time some people spent next to nothing, others as much as $50; but everyone could find some enjoyment, some change from their daily routine at the County Fair.

Distribution of Goods and Services:
(At the Fair)

Equal Distribution	By Status	By Ability and Willingness
band concerts	the best grandstand seats	refreshments

d. Now, leaving the fair, what other examples of each type of distribution can you think of in our society or other societies?

Distribution of Goods and Services
(Other Examples)

Equal Distribution	By Status	By Ability and Willingness
police protection	invitation to a White House dinner	automobiles
recreation programs	use of Army Officers Club	housing
highways	food stamp program	food choices
public school system	better housing based on service to the state in the U.S.S.R.	entrance to Harvard University
medical care in Great Britain		

2. Second Situation: The Ability and Willingness of Consumers to Buy (Student Materials, page 583)

   a. This learning situation illustrates in more detail the third type of distribution.

A day at the Leland County Fair was an annual event for the Jorgensen family, and for months they had been setting aside money for use at the fair. Mr. Jorgensen had budgeted twenty dollars and his wife fifteen for purchases at the fair. Eric, who was sixteen, had saved nine dollars from money earned mowing lawns and doing odd jobs during the summer months, while fourteen-year-old Ingrid had kept aside five dollars from her allowance and baby-sitting money. The youngest member of the family, eight-year-old Kathy, had struggled to save two dollars from her weekly allowance.

The rides along the midway could not be reached soon enough for the three children. After two wild rides on the tilt-a-whirl, Ingrid began to feel a little woozy and Eric was just tired of rides, but Kathy had only begun. She took rides on two other spine-tingling attractions while the rest of the family watched. Kathy and Eric walked through the pig and sheep barns, while the others went to see "The State's Finest Horse Show," for a dollar. As the pair wandered about the fairgrounds the roar of a motorcycle side-show droned in their ears. It proved to be irresistible and Kathy asked Eric to loan her a dollar so she would have some money left for lunch. Eric gave the ticket seller two dollars and the two walked in to see the dare-devil riders do their stuff. It was a long and exciting show and both agreed, the highlight of the fair for them. There had even been a chimpanzee trained to ride around the inside of a huge barrel. As they walked out of the noisy, smoke-filled tent, Eric spotted the rest of the family strolling down the midway.

When they reached their parents, Eric and Kathy suddenly realized it was past twelve o'clock and they were hungry. Mrs. Jorgensen remembered that the Reston Grange had a tent nearby and they always had the best lunches at the fair. This year's menu included Mr. Jorgensen's and Eric's favorite southern fried chicken with all the trimmings for $1.25, double deluxe hamburgers with French fried potatoes and cole slaw for only 50¢, extra thick jumbo milkshakes, 25¢. And who could pass up some of Grandma Olsen's homemade pie and ice cream for only a quarter? Kathy's appetite for hamburgers and milkshakes was at its peak by now. The others ordered the chicken dinner and homemade pie. Ingrid wasn't able to finish her chicken and so she didn't order any pie. Eric was only too happy to oblige her by eating the rest of her chicken.

The kids had gained their second wind after lunch and were all set to hike off together to see the other features of the fair, but first they made arrangements to meet their parents in the commercial and industrial displays building later in the afternoon. Along the midway one could buy a wide variety of souvenirs for fifty cents each, and balloons on sticks for a quarter. Amusement park rides were also 25¢. Eric felt badly about not bringing his girl friend to the fair so he felt obligated to get her a souvenir key chain. Ingrid wanted to add another pennant to her growing collection on her bedroom wall. She finally found a beauty with a show horse painted on it. By now, Kathy had only one quarter left of her two dollars and was undecided as to whether she should spend it on cotton candy or a balloon. She finally chose the balloon since it would last longer and be much more fun. After they had taken in a few of the free exhibits Kathy began to complain of being tired and of having sore feet, so the three started toward the commercial building earlier than planned.

They didn't find their parents immediately and many of the exhibits here were quite fascinating, even for Kathy. There were booths where free samples of cheese were given away, demonstrations of the latest kitchen gadgets, and displays of recent developments in agricultural machinery. Eric began to toy with the idea of buying a ratchet wrench as a birthday gift for his father. He could have bought one for $4.50, and almost did. Then his eyes caught sight of a kit of wrenches which he could easily attach to his motorbike. It wasn't that he didn't want to buy his father the wrench, but--well, that kit would be so useful and, anyway, it was a dollar cheaper than the ratchet wrench. He had just purchased the kit when his father walked up with a ratchet wrench in his hand. It so happened that this was the only item he had seen at the fair that he both wanted and could afford. Ingrid wanted to buy something for both her mother and father. The sight of a lady demonstrating cake decorators gave her the idea of buying a decorator set for her mother, and then using it to make a cake for her father's birthday. She purchased the set for $1.25, and presented it to her mother. Mrs. Jorgensen was also interested in the booth displaying kitchen gadgets such as knife sharpeners, can openers, and potato peelers. She spent a total of $7.50 on an assortment of such things.

It had been a long day and when eight year old Kathy began to cry because her balloon popped and Ingrid began to tease Eric about the gift he had bought for his girl friend, Mr. Jorgensen headed toward the parking lot. For the Jorgensen family at least, the Leland County Fair was over.

b. Using the information from the preceding story each student should fill in the amounts spent on each of the items by the Jorgensens. A blank table is provided in the Student Materials:

	Original Money (Income)	Amount spent on: Rides	Shows & Side-shows	Food	Souve-nirs	Gadgets or Merchan-dise	Total Money Spent
Mr. Jorgensen	$20.00	$	$1.00	$1.50	$	$4.50	$ 7.00
Mrs. Jorgensen	15.00		1.00	1.50		7.50	10.00
Eric	9.00	.50	2.00	1.50	.50	3.50	8.00
Ingrid	5.00	.50	1.00	1.25	.50	1.25	4.50
Kathy	2.00	1.00		.75	.25		2.00

c. Questions:

(1) How did the Jorgensen's ability to buy affect their decisions about what to buy while at the fair?

(2) What can be said about Mr. Jorgensen's willingness and ability to buy rides; Kathy's ability and willingness to buy admission to the motorcycle sideshow; and Ingrid's ability and willingness to buy a piece of pie?

(3) On the basis of this story, make a general statement about the relationship between the amount of income and the percentage of it which an individual actually uses to buy goods and services.

d. The first part of this learning situation showed one relationship between ability to buy and willingness to buy. Each member of the Jorgensen family had a certain amount of money to spend at the fair. The ability to buy was therefore limited. Suppose that each member of the family had had three times as much money available for spending at the fair. How might this increase in ability affect their willingness to buy?

e. The following table of statistics were adapted from a publication of the U. S. Department of Commerce.

Personal Income Received by Each Fifth and the Top Five Percent of Families and Unattached Individuals, 1962 (Consumer Units)*

Fraction of the Population		Percent of Total Income	Average Income in Each Bracket (In 1964 Dollars)	Group
Lowest 1/5		4.6%	$ 1,662	1
Second 1/5		10.9%	3,966	2
Third 1/5	95%	16.3%	5,938	3
Fourth 1/5		22.7%	8,241	4
Fifth 1/5		45.5%	16,505	5
Top 5%		19.6%	28,482	6

Select one of the income groups (for example, group 3 with an average income of $5,938).

Decide how much money you would set aside for each of the following seven categories:

Simplified Estimated Budget for a Yearly Income of _____ (fill in the amount for the income group selected from the previous table)	
Budget Item	Amount
Taxes	_____
Food	_____
Clothing	_____
Housing	_____
Automobile	_____
Recreation	_____
Medical	_____
Savings	_____
Miscellaneous	_____
Total	_____

*Adapted from Statistical Abstract of the United States, U. S. Department of Commerce, Bureau of the Census, 1964, p. 337.

Now select another income group either higher or lower than your first choice and make another simplified budget at that income level.

Simplified Estimated Budget for a Yearly Income of _____	
Budget Item	Amount
Taxes	_____
Food	_____
Clothing	_____
Housing	_____
Automobile	_____
Recreation	_____
Medical	_____
Savings	_____
Miscellaneous	_____
Total	

f. We suggest that the students be asked to make these estimates "cold" (i.e. without any preliminary discussion of a basis on which the estimates might be made). Some students may be able to work out for themselves a rationale for the percentages of the total income they choose to allocate to each of the categories. If all the students make only "wild" estimates, then the teacher will have to impose his own scheme or that of the statistical sources that have collected and summarized data on this question. However, if at least a few of the students can give a rationale for the percentages they have chosen, the following questions may be used to initiate a discussion concerning the affect of increasing ability to buy on an individual's willingness to buy:

(1) Which budget items showed the most change as you moved from one income level to another?

(2) What conclusions can you make about a change in a person's ability to buy and its affects on willingness to buy?

Note: A very worthwhile study could be made by students of the spending patterns of people at different income levels. Statistics are available showing how the "average" U. S. family in each income group spends its money. A little library research on this would make an interesting comparison with their first notions about how the families in each group spend their money.

3. Third Situation: The Businessman as a Buyer of Goods and Services (Student Materials, page 588)

   a. The amount of goods and services bought by a businessman in the operation of his firm will also depend upon his ability and willingness to buy. An examination of a businessman's expenditures, however, shows that his ability and willingness to buy are based on somewhat different decisions than those of the individual consumer.

   b. The ability of the individual consumer to buy is based on his income plus the amount of credit he is able to get; the businessman has two other ways of increasing his ability to buy - depreciation allowances and retained profits. Both of these will be explained in the imaginary case study that follows.

      The willingness of a businessman to buy goods and services also depends on somewhat different decisions than those of the individual consumer. The average individual desires goods and services for his own consumption in the present, while the businessman as businessman buys in the present with his eye more on the future desires of consumers. For this reason his willingness to buy <u>now</u> is determined by his estimation of what his future sales will be. This estimate of the future is based upon the experiences of the businessman in the past. He is concerned with general business conditions, the prospects for the industry of which he is a part, and the prospects for his particular firm. All of these are also part of the following imaginary case study.

The Ralston Camera Company

Robert Ralston started making simple box cameras back in 1946. His cameras cost a few dollars more than the other box cameras on the market, but the quality of the material he used and the careful workmanship made them sturdy and dependable. They sold very well and by 1950 Ralston found it necessary to expand his production in order to meet the purchase orders for his cameras. In addition to increasing the production of his box cameras, he decided to start producing a high quality camera for use by professional photographers. The 1948 expansion cost $350,000. He was able to borrow $100,000, enough to cover the cost of expanding the box camera production, from a bank. But the bank did not want to risk investing in the professional camera project. He had $50,000 in personal savings, but he still needed an additional $200,000 to start producing his professional camera. He decided to change the form of his business from an individual proprietorship to a corporation. This meant that, instead of being the sole owner of his business and taking all the risks himself, he could now sell shares of stock which entitled the buyers to a part of the ownership of the Ralston Camera Company. The stock holders now shared a limited part of the risk, and in return they also shared in the profits if the company made any profits.

The Ralston Pro II, as the revised model was called, was an immense success. The same use of rugged materials and skilled craftsmanship that led to the continued success of the Ralston box camera established the Pro II as a first-rate camera among professional photographers. From 1948 to 1965 the Ralston Corporation paid good dividends to its stockholders except in 1959 when all the camera and related supplies industries suffered from a reduction of sales.

Each year, before making any dividend payments to the stockholders, Ralston set aside some of the corporation's income to cover the cost of the machinery and other equipment worn down in the process of production. The worth of the machinery and equipment declined somewhat each year, or as the economist puts it, it depreciated. By making allowances for this depreciation, the corporation had accumulated enough money to replace the machinery and equipment when it became outdated or worn out in 1965. The corporation also retained some of the profits each year so that it could expand the business without having to borrow large sums from a bank or issue more stocks in the company.

Business was very good for the period from 1960 to 1965 and conditions seemed to indicate a continuing prosperity. The general level of business activity is an important consideration for all businessmen in determining their willingness to invest in goods and services, but for the camera industry it is especially important. Cameras are luxury items and, consequently, their sales are reduced faster than more necessary things like food and clothing when business activity decreases. Mr. Ralston felt that the generally prosperous conditions would continue. In fact, he believed that people would even spend more dollars to get a camera designed for amateur photographers. The Pro II sold for $580 and was therefore too expensive for the serious amateur. However, if he could produce a good model for around $150, he felt that he could compete successfully with the imported foreign cameras in that price range.

Using the depreciation allowances to purchase new machinery for the production of his two established models and the retained profits to buy machinery for the new $150 model (the Ralston Flex), Ralston decided in April of 1965 to again expand the company. The Ralston Flex was scheduled to be available by October 1 in time for the usually heavy Christmas season sales.

c. Focus questions for discussion:

(1) At the two points in the story where the Ralston Camera Company decided to expand, what different circumstances might have made them unwilling to expand?

(2) The Ralston Company's ability to purchase production equipment was determined differently in the two expansion periods. What factors determined the company's ability to buy in each expansion period?

d. <u>Assignment</u>: The following story is incomplete. It creates the kind of situation a businessman might face. Using what

you have learned about the relationship between ability and willingness in the Ralston Camera Company story, put yourself in Mr. Delebar's position and choose one of the three alternatives presented. There is no <u>one</u> correct choice. However, you should be able to justify your choice in terms of <u>ability</u> and <u>willingness</u>--the main factors influencing your decision. Complete the story by having Mr. Delebar come to a decision and giving an explanation of the reasoning behind the decision.

The Delebar Company

In 1922 George Delebar established a small factory to produce electric window fans. He set up a corporation and his uncle and three friends supplied him with $4,000 in return for 40 percent of the stock. After some setbacks during the 1930's, the company was quite successful from 1940 to 1950. From 1950 to 1962, the sales of Delebar window fans declined steadily due to the increased demand for air-conditioners. The decline in sales stopped during the period from 1962 to 1965 with yearly sales remaining fairly constant at 16,000 fans per year. This is a substantial reduction from the peak production of 24,000 fans in 1950, but it is adequate enough to keep the company operating.

Most of the present production equipment was purchased in 1948 and is now worn out. Mr. Delebar must make a decision about the future of his small business. General business conditions are very good. So good, in fact, that more and more people have the money and the desire for devices to cool their homes. The problem for the Delebar Company is that a large number of these persons are now able and willing to buy air-conditioners of large multi-speed fans and, consequently, the demand for the $15 Delebar window fan with a ten inch blade has declined.

To replace enough equipment to allow the company to continue producing around 16,000 of the 10 inch window fans per year would require an investment of $20,000. Through depreciation allowances and retained profits the company has saved $10,000, and the additional $10,000 could be loaned from a bank.

Mr. Delebar is also considering the possibility of discontinuing the production of 10 inch window fans and switching to the production of 24 inch portable fans. The roll-around 24 inch portable fan competes more favorably with air-conditioners, but many companies are already producing such fans. According to Mr. Delebar's calculations, it would cost $50,000 to purchase the equipment necessary to start production on 24 inch portable fans and this would mean selling additional stock in the company to raise the extra $30,000.

A third alternative would be to switch production to large 36" fans for attic installation. These large exhaust fans are often used even in buildings and homes that have air-conditioning. This type of fan is not usually sold in department stores, however, and this would mean that the Delebar Company would have to find new retail sales outlets for its product. Here again the investment would be around $50,000 for new equipment with $30,000 coming from additional stockholders.

THE FLOW OF GOODS AND SERVICES AND THE FLOW OF MONEY

Unit 7: Definition of Flows

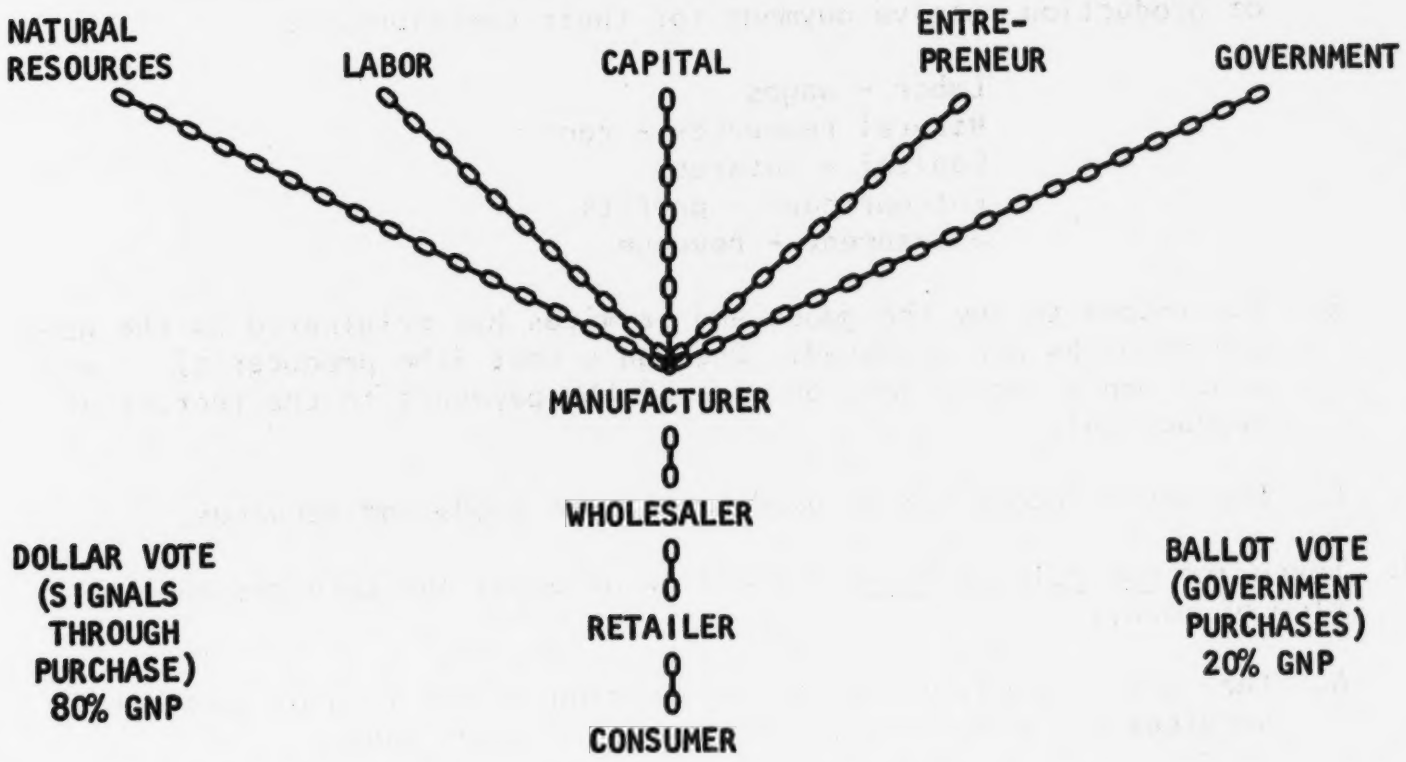
Part I: Sequenced Outline

I. In Units 1 through 6, we have explored the concept of scarcity and the basic economic decisions which have to be made because of it. A society, however, does not face a great pile of the factors of production and then decide what to do with them. What happens is that goods and services are constantly being produced and consumed. The decisions will have effects on the flow of goods and services and the flow of money to buy them. In Units 7 through 14, we will be examining these flows. The notion of <u>flows</u> is the second major division of economics. (See chart in Part II under Learning Situations.)

II. The flow of goods and services is the economic activity involved in producing the factors of production and transforming them into goods and services.

A. One should visualize a chain or web of connected stages of production, illustrated by the following highly simplified diagram:

THE MARKET SYSTEM
U. S. Capitalism Today*



*Government is a factor of production and also acts as a collective consumer buying from the manufacturer, wholesaler, and retailer.

B. The value of the goods and services will equal all of the costs encountered in producing them. The costs will include the payments for rent, wages, interest, profits and revenue. (A more precise statement about these costs will be given in Unit 10.)

C. The figure one gets for the value of the total output is called the Gross National Product. It is the value in dollars of the annual output of goods and services.

D. As goods and services pass through the stages of production, one can think of costs being added as each stage makes its contribution to the production of the goods and services. For example, the manufacturer buys the factors of production and adds his services in turning these into a product. Likewise, the wholesaler and the retailer each add the costs of their services. These additions of costs involved in producing the goods and services are called value-added.

E. Of course, just as with an individual's income, if the annual salary is $6,000, that does not mean that all of the goods and services were consumed, say, on Christmas Day. There has been a flow of goods and services which have been produced during the year.

III. The flow of money includes the sources of income and the uses made of it.

A. When goods and services are produced, the owners of the factors of production receive payment for their contributions.

Labor - wages
Natural resources - rent
Capital - interest
Entrepreneur - profits
Government - revenue

B. The income to buy the goods and services has originated as the goods and services are produced. One man's cost (the producer's) is another man's income (one or more of the payments to the factors of production).

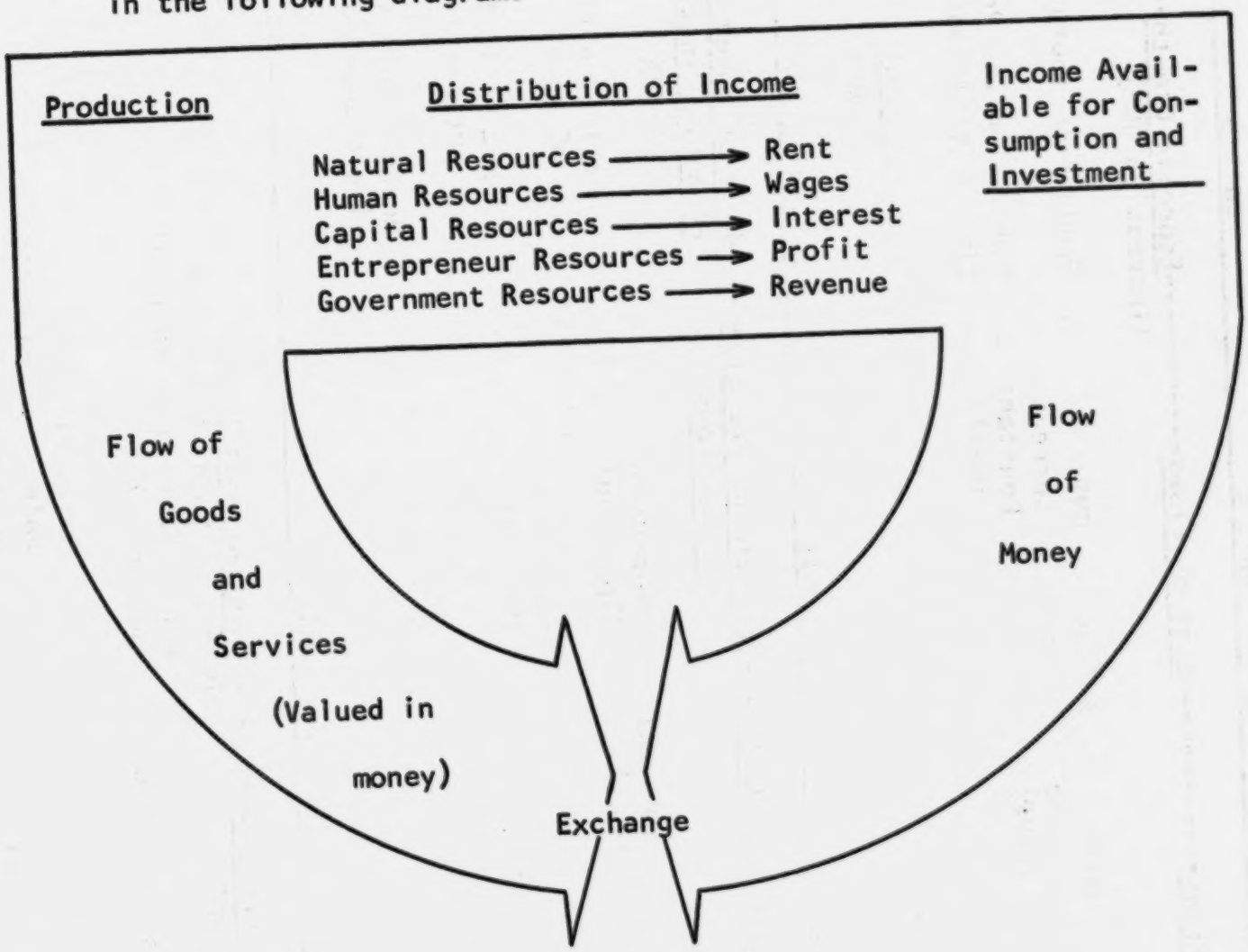
C. The money income can be used to buy the goods and services.

IV. There are two related flows: the flow of goods and services and the flow of money.

A. They are related because the production of the flow of goods and services has simultaneously created a flow of money.

B. They are related because it is assumed that the value of the total output (Gross National Product) is determined by the total costs of producing it and that this amount is equal to the total income that has been created.

C. The two flows and their relations and magnitudes can be summarized in the following diagram:



V. Relation to other disciplines (illustrations)

A. Geography: The flows notion emphasizes the rate and direction of the utilization of resources. A larger GNP may use up resources at a higher rate.

B. Sociology: Since a human being is involved both as a worker and as a consumer, the flow of goods and services and the flow of money suggest the multiple economic roles one is asked to play.

C. Political science: The flow of goods and services and the flow of money are parts of the structure of the economy. Citizens will need to recognize that these parts or sectors of the society are just as real and significant as territorial divisions.

D. Psychology: Since the Gross National Product represents total output, the individual must think in terms of total or aggregate behavior, e.g. the total or aggregate flow of goods and services. These frames of reference may not seem as personal and meaningful as buying consumer goods and services.

SCARCITY (Units 1-6)

FLOWS (Units 7-14)

COORDINATION (Units 15-18)

UNFOLDING THE CONCEPT OF FLOWS

Unit 7 / Unit 8 / Unit 9

Two Flows ---------- Size of Flows ---------- Economic Growth ------
(Increasing GNP)

Goods & Services (GNP=$)

Money Income ($GNP)

Prices & Value of Money

GNP Current Constant (Real)

1. Production (output)
2. Production vs. Productivity (efficiency)

output / inputs

Unit 10 / Unit 11 / Unit 12

---- Breakdown of Flows (GNP) ---- Determining the Size of the Flows ----- Role of Money & Financial Institutions

Two subflows:
Spending (consumption)
Saving (investment)

Four buyers:
Consumers, business, Government, foreigners

Consumption (Spending) — multiplier — Investment (Saving)

Functions & Kinds of money

Financial Institutions

Money supply (including created deposits)

Unit 13 / Unit 14

----- Monetary Controls & Size of GNP ---------- International Trade

Federal Reserve System

Powers of FRB

Monetary & Fiscal Policies

(Flows of Goods & Services and of Money over national boundaries)

Basis of Trade
Balance of Payments
Methods of Payments
Foreign Economic Policies

Unit 7: Definition of Flows

Part II: Outline of Teaching Suggestions

I. Comments on the Content

A. Problems in teaching the concept

1. The definition of the flows notion, like that of scarcity, grows by further exploration of its implications.

2. However, the notion of flows is less familiar and personal than that of scarcity and will likely need more careful presentation and review.

3. Perhaps the greatest difficulty with the notion of flows is that it requires the student to think (a) in aggregates or totals and (b) in terms of modifying a flow of activity. An analogy to the notion of traffic is quite helpful for it represents both an aggregate of automobiles and also a flow of traffic.

B. The concept as part of the unfolding structure

1. Scarcity: Scarcity implied the need to make four basic economic decisions; these decisions about the use of scarce resources steadily influence the flow of the goods and services and the flow of money to buy them.

2. Flows: The notion of flows is a logical extension of decisions, for it shows the economy <u>in</u> <u>movement</u> and establishes the <u>dynamic</u> environment which decisions about scarcity will affect.

3. Coordination: It is necessary for an economy to coordinate the basic economic decisions and to match the flow of goods and services with the flow of money.

4. Marginal analysis: We have seen how economic decisions will be influenced by the additional marginal unit. In the analysis of flows, it will be shown that the size of the Gross National Product will be influenced by the marginal propensity to consume, that is, by the amount of the last unit of income the consumer is inclined to spend. (See especially Unit 11).

5. Institutional factors: The flows of goods and services and of money are each influenced by customs and laws influencing what will be produced and what consumers may buy.

II. Comments on the Learning Process

A. Vocabulary: The word "flows" invokes many analogies, for example, of rivers, traffic, and plumbing. These analogies are helpful.

Yet what is being emphasized in the flow of goods and services and money is not the movement of the goods and services themselves but of the value of the goods and services and the money to buy them.

B. Mathematical concepts and skills

1. Since there are two flows which are presumed to be equal in value, we can think of this equality as an equation:

$$\underset{\text{(GNP)}}{\text{Value of Produce}} = \underset{\text{(GNP)}}{\text{Total Payments}}$$

2. The concept of equality can be thought of also as an income statement (profit and loss statement) of a store. The value of the product is the sales; the costs of doing business are subtracted. The remainder is profit. Add the profit to the costs and it will equal the sales. Viewing the flows this way gives it a "business" look.

3. The idea of flows ending in a quantity is also present in other uses of the notion of flows, e.g. if water flows through pipes at the rate of 1 gallon per minute, how much will have flowed through in an hour?

4. The separation of values from the object might be illustrated by the fact that the price tag on the suit is not the suit. Indeed, this distinction is related to the notion that the symbol for the number two is not itself the number.

C. Ability to generalize

1. One may begin by the obvious and crude illustration of a parent going to work and receiving pay. His labor becomes part of the product which has a value and his pay enables him to buy the product. Now, let's add up all people going to work.

2. The idea of flows may offer some difficulty because an individual may not see how his own behavior fits into the flows of the entire economy. However, through repeated demonstration the notion can become real, and so support his ability to generalize from his own income and expenditures to those of the nation.

D. Background

1. Going to work to produce something and getting paid--these two basic ingredients of the flows notions--are in the background of most students.

2. Newspapers and student news publications often refer to data on the GNP.

III. Learning Situations

A. From Teacher to Teacher

The first six units unfolded the concept of scarcity by showing that every society faces certain basic economic decisions as a result of scarcity. The analysis illustrated how each of these decisions was linked one with another. But the linkage was made in a static and linear manner as if societies took up each of the decisions one at a time. This static quality was used in the first six units to simplify the process of analysis. The unfolding logic of the discipline of economics puts forward a static model of economic relationships before moving into the more complex, dynamic models. All theoretical structures of the discipline of economics may be thought of as "maps". That is to say, they are approximations of reality, not photographic representations. The "map" that was drawn in the units on scarcity outlined only the broad configurations of reality. The next eight units dealing with flows add more detail to our economic map by showing the dynamic interaction between the basic decisions of scarcity and their effects on on-going economic activity. In this sense, the units on flows are a continuation of the unfolding concept of scarcity.

The first task in Unit 7 is to create a situation in which the dynamic character of economic activity is illustrated. The first learning situation presents in very simple terms the chain of production involved in making a wool suit. The idea of a chain of linked economic events is important here. The process of production is no longer presented as an immediate occurrence; instead, it is seen as a process of decision-making occurring over a period of time and involving the decisions of several persons. This situation introduces the idea that income results from the production of goods and services, but the notion of continuous circular flows is developed in the second learning situation.

The second learning situation is an extension of the concepts examined in the first situation. Instead of dealing with a single product, the students are engaged in the process of summing the flows relationships for three products. Further extension of the same concepts to the idea of aggregate flows for a nation then follows through a discussion. The concept of a continuous flow of goods and services in exchange for a continuous flow of money builds on the previous materials and the unit culminates with the introduction of the term Gross National Product.

The analysis of flows introduced in this unit and unfolded throughout the entire section on Flows (Units 7 through 14) is a theoretical construction, a structure for systematically organizing the billions of economic events which occur in a society into a meaningful pattern. The need for this structure should be emphasized in this unit and the entire section should be emphasized as a step by step examination of a developing structural framework.

B. Sequenced Learning Situations

1. First Situation: Introduction to the Two Related Flows (Student Materials, page 591)

a. Up to this point in our discussion we have tended to view specific economic processes as if they were taking place alone and unrelated to other economic activities. We have intentionally blocked off the concept of scarcity into such parts as What to Produce, etc. in order to illustrate specific ideas. This may have given rise to the feeling that a society begins with a neat pile of resources which it proceeds to parcel out much as one divides up a candy bar among friends. The actual working of an economic system is not quite that simple because many decisions are being made at the same time. We don't produce cars one month, television sets the next, and food later. Instead, all these things are being produced simultaneously and the uses of the resources are continually changing.

The dynamic nature of economic activity may be viewed as a <u>continuous</u> or <u>circular</u> interaction between two flows: the flow of goods and services and the flow of money used to buy the goods and services.

b. The notion of economic flows may be illustrated by a series of diagrams which trace in some detail the various stages in the production of a wool suit from raw wool to finished product. In this instance, we will actually retrace the stages of production from consumer through retailer, wholesaler, tailor, weaver, and farmer. At each stage in the process special attention will be given to the successive changes which occurred in the value of the suit. The stages are illustrated by the narrative and diagrams below:

The Route of a Suit

Mr. Chasnik's job requires him to wear a suit every working day because he must meet customers in his office. But he must also go into the machine shop and inspect the progress of the work being prepared for his customers. This means that his suits receive a lot of wear and tear, and frequently he must buy a new suit. Obviously, he doesn't drive out to a sheep ranch and shear a few sheep. Neither does he weave the cloth or tailor his own suit. How then does the wool get from the sheep's back to Mr. Chasnik's back? Simply put, Mr. Chasnik goes to a store and buys a suit. But there is more to it than that. Where does the retailer at the store get the suit? Does he shear the sheep and so on? No, usually he buys the suit along with several other suits from a wholesaler. The wholesaler in turn bought the suit and hundreds of others from a tailoring company that made the suits from woolen cloth that they purchased from a weaving mill. The weaver purchased the raw wool from a sheep farmer and the farmer, of course, took the wool from the backs of his sheep.

These stages in the production of a suit are probably already familiar to you. We can make a simple diagram to show the route of a suit from farmer to consumer.

Diagram 1

As the wool goes through these stages of production, money is exchanged at each step in return for the increasing value that is added to the original wool as it moves along to the consumer.

At each step in the production an exchange takes place. Money is exchanged for goods and services. The whole process of changing the wool on the sheep's back to the woolen suit on Mr. Chasnik's back results in a flow of money in exchange for a flow of goods and services. We can examine these flows at each stage of production and make a diagram that represents these flows. Each new diagram will show the flows for the particular stage of production under discussion and will also show the previous stages of production that have already been covered. The last diagram will then show us a complete picture of the two flows.

The farmer feeds and cares for his flock of sheep. He also shears the sheep and transports the wool to the weaving mill. Of course, when he sells his wool to the weaver, he sells more than enough for one suit; but we want to make our diagrams as simple as possible. Therefore, we will estimate how much money he receives for the wool that is needed to produce only one suit. Let us say that he receives $5 from the weaver. The $5 represents the value he has added to the wool by getting the wool from the back of his sheep to the weaving mill. For the sake of simplicity throughout this account, we will assume that no other expenses are involved.

Diagram 2

Stage of Production	Value Added	Income Generated
Weaver ↑ Farmer	$5	$5

The weaving mill cords the wool, spins it into thread and weaves the thread into cloth. The weaver then sells the cloth to a tailor for $15. But the weaver has included the $5 he paid to the farmer in his price. We must subtract this $5 from the $15 in order to find out the amount of value that the weaver added to the raw wool.

Diagram 3

Stage of Production	Value Added	Income Generated
Tailor		
↑ Weaver	$10	$10
↑ Farmer	$ 5	$ 5

The tailor cuts the cloth and makes it into a suit. He then sells the suit to a wholesaler who pays him $40. Again, we subtract the $15 the tailor paid the weaver for the cloth and find that the value the tailor added equals $25.

Diagram 4

Stage of Production	Value Added	Income Generated
Wholesaler		
↑ Tailor	$25	$25
↑ Weaver	$10	$10
↑ Farmer	$ 5	$ 5

The wholesaler buys large quantities of suits. For example, suppose that the suit we have been talking about was a size 40 suit made of worsted wool. The wholesaler may buy a thousand such suits. In turn, he transports and sells these suits to several retail stores. Let us say that he sells the particular suit we have been talking about to a retailer for $50. The ten dollars of value added is the income the wholesaler receives in return for his services.

Diagram 5

Stage of Production	Value Added	Income Generated
Retailer		
↑		
Wholesaler	$40	$40
↑		
Tailor	$25	$25
↑		
Weaver	$10	$10
↑		
Farmer	$ 5	$ 5

Finally, the retailer displays several different kinds of suits, he helps Mr. Chasnik make his selection, and takes care of the alterations needed to make the suit fit properly. Mr. Chasnik purchases the suit for $75. We now subtract the $50 that the retailer paid to the wholesaler when he bought the suit. The $25 then represents the value added to the suit by the retailer.

Diagram 6 illustrates the complete "Route of the Suit".

Diagram 6

Stages of Production	Description of Transactions	Value Added	Income Generated
Consumer ↑	Consumer pays $75 to Retailer.		
Retailer ↑	Retailer pays $50 to Wholesaler for suit. Displays suit in store and sells it to Mr. Chasnik for $75.	$25	$25
Wholesaler ↑	Wholesaler pays $40 to Tailor for finished suit. Wholesaler transports suit and sells it to Retailer for $50.	$10	$10
Tailor ↑	Tailor pays $15 to Weaver for cloth, designs and cuts suit. Sells suit to Wholesaler for $40.	$25	$25
Weaver ↑	Weaver pays $5 to Farmer for wool. Weaves wool into cloth. Sells cloth to Tailor for $15.	$10	$10
Farmer ↑	Farmer shears sheep and sells wool for $5 more than his costs.	$ 5	$ 5
Arrows indicate flow of goods and services.	Total	$75	$75
		Arrow indicates a flow of money.	

The total amount of value added, $75, is the same as the total amount of income created and this amount is the same as the retail price of the suit.

Will the total value added, the income generated, and the retail price always be the same? The answer is yes. Suppose that the retailer reduced the sales price to $65. After subtracting the $50 he paid for the suit, we would find that the value he added was $15. His income would also be $15. Putting these $15 figures into the last diagram, we would find that the total value added and the total income created would again be equal to the retail price. In this case they would all be $65.

Suppose that the retailer wanted to sell the suit for $100. You looked at the suit in his store and decided that the "value" of the suit was not $100. You are now using the word "value" in a different way than we have been using it in this illustration. Perhaps you feel that the "value" of the suit is only $25. The economist has no way of knowing the different "values" that the suit will have for thousands of people.

In this illustration, the value of the suit is determined by the actual sale price. When one person is able and willing to buy the suit, whatever price he pays is considered as the value of the suit. If one person is able and willing to pay $100 for the suit, then in this case the value added by the retailer would be $50 ($100 retail price minus $50 price the retailer paid the wholesaler = $50 value added).

What about the suits that the retailer has not sold? How will we find the total value added for these suits? The unsold suits are part of the retailer's inventory. All the unsold merchandise in the store is considered as the retailer's inventory. Since he has not, as yet, sold these suits, obviously he has not gained any income from them and until he sells them he has not added any value to them. We, therefore, say that the total value added for an unsold suit is equal to the last sales price in the chain of production. In our illustration this is $50, the price the retailer paid to the wholesaler.

The following questions may be used to focus student attention on the need to distinguish between the sale price of an article and the income it creates.

(1) The weaver sold his cloth to the tailor for $15. Why cannot this $15 be considered the weaver's income? How much did he have to spend before he could sell the cloth to the tailor?

(2) What happened to the value of the wool between the time the weaver bought it and the time he sold it to the tailor?

(3) What is the difference between the sale price of the suit at each stage and the income it generates?

c. Student application of the concept

Your parents have decided to purchase a new maple dining room set. The furniture which they have picked out costs $110 for a table with six chairs. Trace the stages of

production for the furniture in the same manner as we traced the production process of the woolen suit. To do this you must account for the logging operation when the trees were felled, the sawmill which makes lumber from the logs, the furniture factory, the wholesale furniture warehouse and finally the retail furniture store where the furniture was purchased. Using a diagram, show the value added at each stage in the process, illustrate the direction of the two flows and construct a diagram similar to diagram 6 showing the relationship between value added and the income generated.

In order to set up a diagram of the flows you will have to know the sale price at each stage of production. These are listed below:

(1) Loggers sold trees to sawmill for $10.

(2) Sawmill sold lumber to manufacturer for $20.

(3) Furniture manufacturing company sold finished product to wholesale dealer for $60.

(4) Wholesaler sold transported furniture to retailer for $80.

(5) Retailer sold displayed furniture to consumer for $110.

2. Second Situation: Expanding the Concept of the Two Related Flows (Student Materials, page 596)

   a. The first situation illustrated a relationship between the two flows, namely, that that total amount of income generated in the creation of a good or service is equal to the total value added in the process of producing the good or service. The second situation will expand the concept of flows by showing that the process used to describe the flows for one product can be expanded for several products and ultimately for a whole society.

   b. To some extent the second situation is a repetition of the first situation in that both are concerned with the analysis of flows. The important difference is that in the second situation the emphasis is on the concept of aggregate flows and the continuous nature of the flows. The following sketch poses this question: How can the total value of output in a society for a given period of time be determined? The learning situation provides information for making the first extension of the accounting process beyond the single product analysis given previously. The information is placed in the context of a small community which produces woolen suits, furniture, and canned pears. After the students have had this experience of dealing

with aggregation in simplified terms, a discussion is suggested which should allow students to make the further extension of the concept for themselves.

c. Illustrating aggregate flows

In "The Route of a Suit" we saw that at each stage of production, value was added. We also saw that the value added in each stage of production determined the amount of income generated.

Your analysis of the production of the dining room furniture should have shown the same relationships. In fact, every item produced in the United States, or any other society, could be analyzed in a similar manner. What use would we have for such detailed information about individual products? Perhaps very little, but if we knew the total value added in the production of all the goods and services made in the United States in a given year such information would help us to measure the performance of the economy. If we had such measurements over a period of years we could compare the present performance of the economy with its performance in the past. Consequently, the question which we will now seek to answer is: How can the total value of the output in a society for a given period of time be determined?

It may seem rather obvious to you that the way to do this is to add up the total value added in the production of each and every item made in the United States during a given year. Although the process is not difficult and involves nothing more than simple addition, we will see that the task is actually quite complex and laborious. Rather than overwhelm you in the task of calculating the total value of all goods and services produced in the United States, the following illustration calls upon you to create a system for arriving at the total value of just three products: a woolen suit, a dining room set, and a case of canned pears.

From the previous situation you know that the value added to the suit was $75 and to the dining room set, $110. The value added to the case of canned pears we will set at $5. The total value added for the three products will be $190. You have already become aware of the two related flows and how they may be illustrated in the suit and furniture example. Now we are asking you to illustrate the total of totals or the aggregate value added to all three products. (The term "aggregate" is easier to use than "total of totals" but the <u>idea</u> of a total of totals or grand total is at the heart of the aggregate notion.)

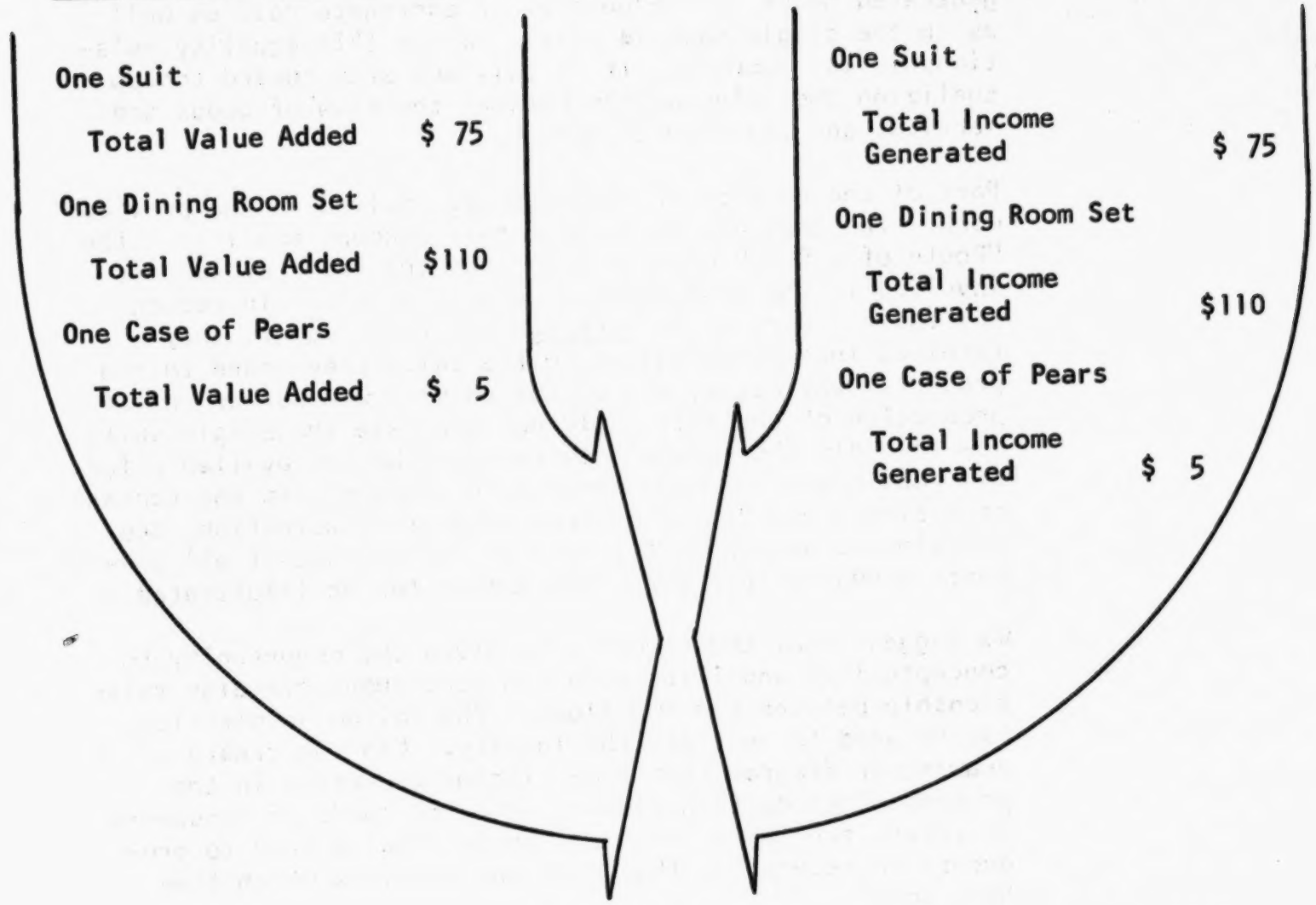
How would you illustrate the two related flows as aggregate flows using the three products listed above?

Before the students begin creating drawings to illustrate the aggregate flows, there are some points that should be emphasized. First, the drawing must show the process of addition (aggregation) within each flow. Second, it must show the relationship between the flow of goods and services and the flow of money. Third, the drawing must be clear enough so that the main idea is readily apparent.

d. Some students may be able to create such an illustration entirely on their own. Others may require assistance. The teacher may decide to make the creation of an illustration a class effort or assign groups of students to work on it. The important thing is that they are given some opportunity to first formulate the concept of aggregate flows in their own terms. The teacher will have to use his discretion in deciding how much time to allocate to this effort.

The directions given to the students restrict their illustration of aggregation to three products. The following drawing is presented as a guide to the general form the student illustrations may take:

Illustration 1


Flow of Goods and Services
One Suit
Total Value Added $ 75
One Dining Room Set
Total Value Added $110
One Case of Pears
Total Value Added $ 5
Flow of Money
One Suit
Total Income Generated $ 75
One Dining Room Set
Total Income Generated $110
One Case of Pears
Total Income Generated $ 5

Aggregate Value Added $190 ⇒ = ⇐ Aggregate Income Generated $190

The notion of the equality that exists between the aggregate value added in the process of producing goods and services and the amount of income generated in the process is the first step toward understanding the full relationship that exists between the flows. The following questions are suggested as the focus for expanding the discussion of this relationship:

(1) If the number of items were increased to the point where they represented all the products produced in the United States for a year, would the aggregate value added still be equal to the aggregate income generated?

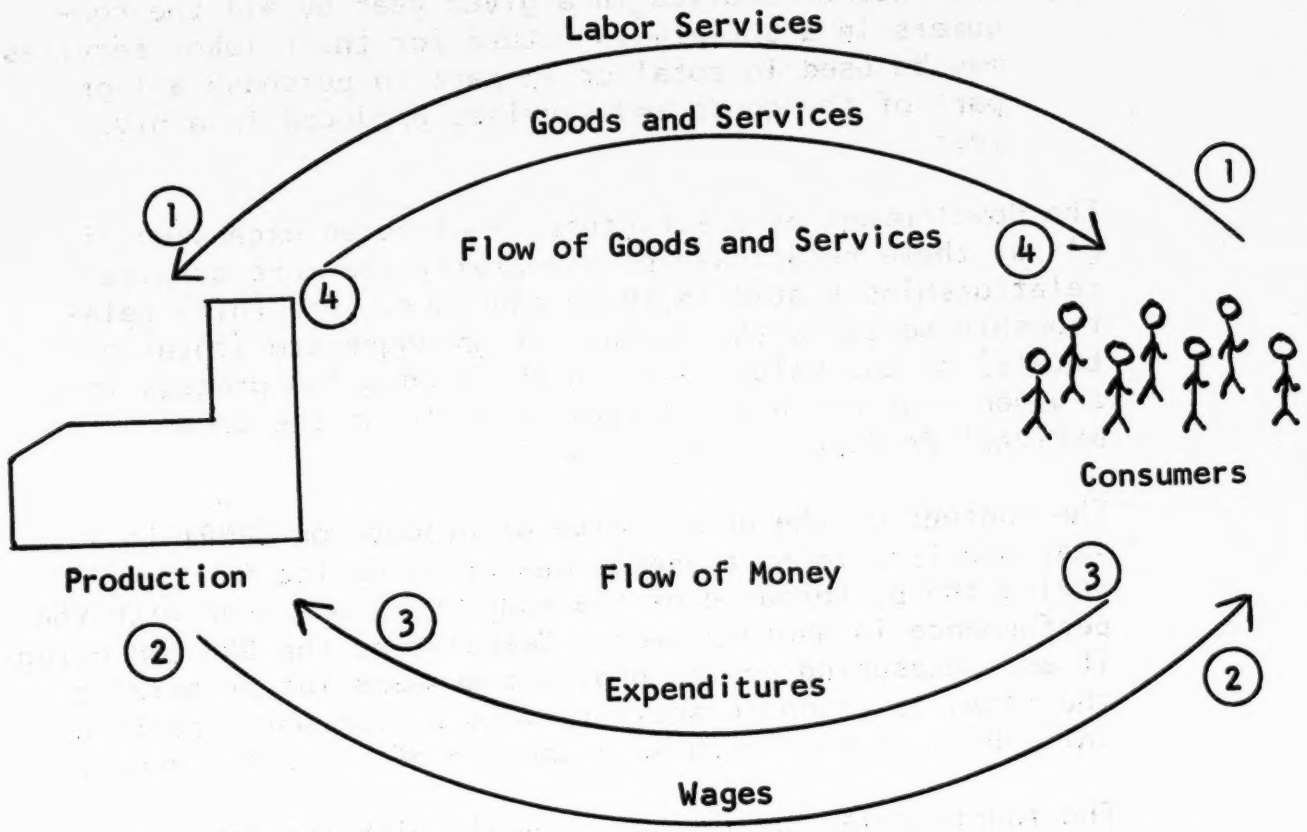
(2) How would you illustrate the relationship between the two aggregates for all the products produced in the United States during a given year?

e. In summary the first learning situation and the second learning situation up to this point have illustrated that the equality relationship between value added and income generated holds in the general or aggregate case as well as in the single case (a suit). While this equality relationship is important, it is only one step toward conceptualizing the relationship between the flow of goods and services and the flow of money.

Part of the concept of exchange was implied in the previous work. The task now is to make this concept explicit. The "Route of a Suit" example described the labor of persons involved in the production of a woolen suit. In return for their labor, or in <u>exchange</u> for their labor, they received income equivalent to the value they added to the product. Obviously, all of the persons who worked on the production of the suit could not purchase the single suit. How then did the income they received become available for the continuation of the production process? In the context of a single product or a three product illustration, the question is unanswerable; but, in the context of all products produced in a year, the answer can be illustrated.

We suggest that the students be given the opportunity to conceptualize and illustrate the continuous circular relationship between the two flows. The following question may be used to initiate the inquiry. Can you create a drawing or diagram that shows income generated in the process of production flowing into the hands of consumers in return for their labor and money flowing back to producers in return for the goods and services which they have sold?

The following drawing is presented as a guide to the general form the student illustrations may take:



f. By examining the total (aggregate) picture of economic events in a society we can see relationships between these events that escape us when we look at them only in isolation. An economic event occurs every time a person chooses to produce or consume something that has value to other persons in the society. Obviously, billions of economic events occur every day. Each economic event is an economic fact. We must have some basis for arranging these facts in an orderly manner if we want to understand man's economic behavior. Consequently, we must have a structure that provides a means for selecting and collecting the billions of economic facts into a meaningful pattern.

Our examination of the concept of flows in this unit has developed some of the elements needed for a structure of economics. We have examined the following relationships:

(1) In the production process, value is added to the product in each stage of production (i.e. farmer, weaver, tailor, etc.).

(2) The amount of value added in each stage of production generates an equal amount of income.

(3) The total value added to the total of all goods and services produced in a given year is equal to the total amount of income generated in a society during that year.

(4) The income received in a given year by all the consumers in a society in return for their labor services may be used in total or in part to purchase all or part of the goods and services produced in a given year.

The development of a structure involves an expansion of all of these relationships especially the more complex relationships stated in three and four. The third relationship contains the concept of an aggregate (total of totals) of the value added in the production process for a given year which economists refer to as the Gross National Product or simply GNP.

The concept of the gross value of production (GNP) in a year promises to be a useful measuring device for comparing the performance of the economy in one year with the performance in another year. Calculating the GNP and using it as a measuring device provides a means for organizing the flows of economic activity into a systematic pattern. Units 8 and 9 deal with an expansion of the GNP concept.

The fourth relationship, which deals with the continuous nature of the flows, will be the primary consideration for the studies in Units 10, 11, 12, and 13.

THE FLOW OF GOODS AND SERVICES AND THE FLOW OF MONEY

Unit 8: Measure of a Nation's Income

Part I: Sequenced Outline

I. In the previous unit, we learned to see economic activity as a continuous flow of goods and services and the flow of money. We learned also that the flow is valued in dollars. And as we now know, the flow of goods and services is equal in value to the flow of money because the total costs involved in creating the flow equals the amount of money available to purchase the entire output. In this unit, we will learn more about the problems involved in measuring the size and magnitude of the flow.

II. Since the nation's output and income is measured in dollars, we must first examine the problems of measuring with money. We must keep two big ideas in mind:

A. First, the relation of prices and the value of money.

1. Money is used to exchange for the good or service, but we give a certain amount of money, obviously to match or measure the value we believe we are buying. Money is then serving as a measurement of value.

2. We usually assume that what we are measuring is changing and the measuring stick is not. Could we tell though, if a yard of cloth (by previous measurement) has shrunken, whether the cloth is shorter or the yardstick is longer?

3. Suppose that a product, say, meat has become more valuable and its price is higher. Then a dollar - our measuring unit - will buy less of it than it could before. Since the dollar will buy less, we say that it is worth less; we would have to give more money to buy as much meat as we did before the price was higher.

4. We can now state an important and clear relationship - which we have always vaguely known - that if prices go up, the value of the dollar goes down and vice versa. Prices and the value of the dollar move in opposite directions. Mathematically, the relationship is inverse.

B. Second, the worth of the dollar is what it will buy on the average.

1. Since some prices may have gone up, some down, and in various proportions, the dollar's value will be determined by the average of these prices. If the average has gone up, the dollar's value has gone down.

2. The average of prices is called the price level, meaning the level of prices.

3. To make the dollar's value as meaningful as possible, we usually choose a group of related items, for example, consumer prices, for then we can speak about the value of the consumer's dollar.

III. Now that we know something about the relations of prices and the value of the dollar, we will see, with a few examples, how measuring the changes in prices show us <u>indirectly</u> or <u>inversely</u> the value of the dollar.

A. Assume prices have doubled.

$$\frac{\text{Prices in Given Year}}{\text{Prices in Base Year}} = \frac{200}{100}$$

The value of money is the inverse:

$$\frac{100}{200} = \frac{1}{2}$$

B. A more realistic example:

$$\frac{\text{Consumer Prices in a Given Year (1964)}}{\text{Consumer Prices in Base Years (1957-59)*}} = \frac{108}{100}$$

The value of money is the inverse:

$$\frac{100}{108} = .93^{**}$$

IV. How can our knowledge of the relation of prices and the value of money help us in making meaningful comparisons in the measurement of the nation's income (that is, output) or its Gross National Product?

A. The following figures show the Gross National Product produced in the indicated years.

1942 ----- $159 Billion
1964 ----- 622 Billion

In each of the years the output was <u>valued</u> or <u>measured</u> in terms of what the dollar would buy in each of those years. It took $159 billion of 1942 dollars to produce and buy the 1942 output.

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*Three years averaged to give a better denominator or basis for comparison.

**In other words, a dollar in 1964, compared with 1957-59, would buy only 93 cents worth of goods and services.

We are measuring in dollars that reflect the then current value of the dollar. We say the figures represent the Gross National Product in Current Dollars.

B. Compared with 1964, it appears that we were producing almost four times as much as we were producing in 1942. Is that correct?

1. We could make a better comparison by imagining that we could walk back into 1942 and buy the Gross National Product of that year with 1964 dollars. We would then be measuring with dollars of the same value. If the worth of the dollar in 1942 and 1964 were the same, the figures for the outputs would not be different. But, as we all know, prices were much higher in 1964 than they were in 1942, so 1964 dollars are worth less. What would the 1942 output be worth in 1964 dollars?

1942 ----- $323
1964 ----- 622

2. Measuring the GNP in Current Dollars made it appear that we were producing four times as much (A above). If we use dollars of the same value, that is, measure in Constant Dollars, it appears that we were producing in 1964 about twice as much as in 1942.

3. We can see why: it took twice as many 1964 dollars to buy the 1942 output, so prices must have about doubled from 1942 to 1964. It took about twice as many 1964 dollars to buy the 1942 output.

C. What then have we learned about measuring the nation's income (the Gross National Product).

1. We can measure it in Current Dollars.

2. We can correct the measurement to allow for price changes. The result is a measurement of the nation's income in Constant Dollars. At times, the measurement in Constant Dollars is called the Real Gross National Product.

3. The measurement in Constant Dollars gives us a closer comparison of what was produced, that is, comparing quantity with quantity. Of course, other changes would also have to be taken into account--we haven't here--but the quality may have improved, we may be paying for more service (e.g. packaging vegetables), etc.

V. Relation to other disciplines (illustrations)

A. Geography: The problems of measurement of the nation's income resemble those presented in geography, e.g. correcting for distances in preparing maps. In this sense, the "real" world is a construction.

B. Sociology: The need to make more accurate comparisons and to correct for distortions is basically similar to the requirement in sociology for comparing standards of living in different places or times.

C. Political Science: The citizen's need to use data requires that he be sophisticated about the implications of the data and how careful one must be to keep such analysis free from distortion.

D. Psychology: The correction of the Current GNP for price changes indicates that a view of the world depends upon the corrected vision of the viewer. The Constant GNP, in terms of adjustment for prices, and from the point of view of comparison, is truly the "real" GNP. (See the comment above on Geography).

THE FLOW OF GOODS AND SERVICES AND THE FLOW OF MONEY

Unit 8: Measure of a Nation's Income

Part II: Outline of Teaching Suggestions

I. Comments on the Content

A. Problems in teaching the concept

1. This unit is based upon the appreciation of the notion of measurement and an application of it.

2. Perhaps the most difficult of all concepts to teach is one involving a definition of measurement. Most people take measurement for granted, finding inches and pounds all too familiar but not clear, and being almost overwhelmed by physical measures of force, voltage, etc.

3. It is even more difficult to see money as a measuring stick and to realize how difficult it is to apply.

4. Finally, in applying the correction for price changes, one is required to think of buying an <u>earlier</u> output with money of current comparative value.

B. The concept as part of the unfolding structure

1. Scarcity: In the analysis of scarcity, we have already encountered the problem of measurement, for example, in the discussion of relative prices and also in the analysis of the meaning of efficiency.

2. Flows: The notion of the measurement of the size of the flow is a logical extension of the idea of flows and follows from the definition of the Gross National Product, namely, the annual output of goods and services <u>valued in dollars</u>.

3. Coordination: Much of the judgment concerning the performance of a system will rest upon the measure of real output from one time to another.

4. Marginal analysis: In comparing the rate of growth of an economy, the rate should be applied to the increases in the Constant or Real Gross National Product.

5. Institutional factors: Money is, of course, an economic institution. To examine the problems of using it as a measure of output is to explore one important task which this institution is called upon to perform.

II. Comments on the Learning Process

A. Vocabulary: Since the value of money is an <u>average</u>, this term will need to be defined; also the fact that economists use the term "price level" to refer to the notion of the average of prices. Other terms, mainly mathematical, are "inverse relationship" (see B below), "given year," "base year." None of these are new or difficult, but will need to be reviewed

B. Mathematical concepts and skills

1. First there is the notion of a measuring stick or unit of measure. There are examples to illustrate how a unit of measure may itself vary, for example, a pound at the north pole.

2. The notion of inverse relationship is difficult for most students. It should not offer difficulty when prices and the value of money are being discussed because, at least verbally, most people "know" this relationship.

3. Experience has shown many economic teachers that students will know that when prices have doubled, the value of money is one half. However, they will not be able to express this relationship in mathematical symbols or recognize what inversion means.

4. Also many cannot move to the "next step" and be sure what is the value of money if prices increase 50%. It is even less likely that everyone can handle the mathematics if prices increase 10%.

5. The application of this idea to the correction of the GNP will offer more difficulties, perhaps, since it involves the following ratio:

$$\frac{\text{GNP (1942 dollars)}}{\text{GNP (in 1964 dollars)}} = \frac{\text{Prices then}}{\text{Prices now}}$$

That is, the Current GNP bears the same relation to what it would be in Constant Dollars as the prices then bear to the prices now. Example:

$$\frac{\text{GNP (1942 dollars)}}{\text{GNP (in 1964 dollars)}} = \frac{47.4}{100}$$

C. Ability to generalize

1. If one begins with simple illustrations of price changes, the problem will be reasonable clear.

2. The ability to generalize, in this case, depends on the help which more precise mathematics can give.

D. Background

1. While consumer prices have not been rising lately, many people talk about "inflation," so students will have known about such a problem, even if the facts may not support the notion at present.

2. Historic accounts are filled with references to the rise and fall of prices.

III. Learning Situations

A. From Teacher to Teacher

Unit 7 served as an introduction to the dynamic conception of economic activity. It provided a working definition of the concept of flows, a definition that is expanded throughout the remainder of the course. It introduced an important economic indicator, the Gross National Product, that is useful in analyzing the flows of economic activity within a nation. This valuable analytical tool, however, must be used with skill and caution if it is to provide an adequate description and guide for policy.

This unit explores the initial safeguards that one should be aware of before attempting to make use of the concept of Gross National Product. More sophistication about this important concept will follow in the next unit.

The first learning situation attempts to create a setting that will be familiar to students. If GNP figures are going to serve as a basis for describing economic activity and later as a basis for formulating policy, the inverse relationship between price changes and the changing value of the dollar must be firmly established.

The second and third learning situations deal with the mathematical problems involved in finding a way of standardizing the fluctuating value of the dollar. In both situations, we have presented the problem within the context of the U.S. economy. Furthermore, we have simplified the illustration of the price index and the conversion of GNP into Constant Dollars by creating hypothetical situations in which we can limit the number of items and choose combinations that allow the clear presentation of the mathematical relationships without burdening the student with cumbersome calculations. More advanced students may want to look at Francis Doody's, Introduction to the Use of Economic Indicators or the historical and descriptive background information contained in the Economic Indicators, published by the Joint Committee on the Economic Report, for an explanation of price correction.

The last section of the third situation deals with the conversion of actual GNP figures for the United States into Constant Dollars. The discussion that follows these computations is intended to serve as a linkage with the next unit on economic growth.

B. Sequenced Learning Situations

1. First Situation: Changing Prices and the Value of Money (Student Materials, page 597)

a. The previous unit introduced the concept of flows. One of the main reasons for investigating the flow of goods and services and the flow of money is to make comparisons between the state of the economy in one period of time with the state of the economy at some other period of time. Knowing the Gross National Product for both of the periods being compared is essential because this allows us to see the relative size of the flows. However, comparing the GNP for one year with the GNP for another year presents some problems. This unit deals with one of the problems involved in making these comparisons.

b. Gross National Product is measured in dollars and the value of the dollar changes from one year to the next. The following story highlights the relationship between price changes and the value of money:

The Good Old Days

The music from Mark's bedroom boomed into Mr. Crandall's ears as he entered his home. "Is that boy deaf?" he shouted to Mrs. Crandall. "It's another new record that Mark picked up this afternoon," she replied. "Another record--that boy goes through money like water. Must he spend every cent he earns? He's earning three times as much as I was at his age, but all he does is spend, spend, spend--never a thought to saving."

As Mrs. Crandall set the supper table she said sympathetically, "Now, John, he doesn't spend any more than the other boys and that's the first record he's bought in a long time."

"Just the same, I think we ought to talk about this business after supper and maybe we should include Janie in the discussion, too."

After supper Mr. Crandall asked Mark and his sister to draw up a list of all the things they had bought during the last week. While they were doing this, Mr. Crandall went to the attic and dug out the old budget book his father had made him keep in 1928.

As he came back into the living room, he felt quite confident that this book would convince Mark and Janie that they were spending entirely too much. "Look here," he said as he opened the book on the table, "this is my expense account for the week of November 20, 1928." Mark turned to his sister and whispered, "Looks as if we're in for the 'good old days' bit again."

Mr. Crandall felt sure he would clinch his argument by pointing to the fact that he was able to save $.50 a week out of his weekly earnings of $5.

Mark handed his list to his father. He earned $15 a week working part-time in a supermarket, which was three times as much as his father had made, but he was saving only about $1 a week.

Mr. Crandall asked, "Can you give me one good reason why you shouldn't be saving $5 a week?"

"Well, they take $3 off for income tax; so I really only have $12 a week," answered Mark. He knew that $12 was still a lot more money than the $5 his father received, but somehow he just couldn't imagine saving $5 of those $12 each week. After all, he thought, I'm not a little kid anymore. I'm a senior in high school and $7 a week--impossible! He sensed that there was something unfair about his father's comparison but couldn't quite put his finger on the difficulty.

At this point in the discussion, Mrs. Crandall injected another idea. She had been reading her husband's 1928 budgets and had been thinking back to her own high school days. "Look at this page, John." She spread the book out on the coffee table:

Week of November 20, 1928

Earnings: $5

Expenses:

4 ice cream sodas	$ .60
5 gallons of gasoline	.75
1 long-sleeve dress shirt	2.00
1 haircut	.50
2 movie tickets	.50
	$4.35
Saving	.65
Total	$5.00

Mark's expression brightened as he realized what his mother was driving at. He grabbed a tablet and quickly jotted down some figures. "Take a look at this," he said. "This is what I would have to spend just to get the things on your list."

4 ice cream sodas	$ 1.00
5 gallons of gasoline	1.60
1 dress shirt	4.75
1 haircut	2.00
2 movie tickets	1.80
	$11.15
Plus the income tax I have to pay	3.00
Total	$14.15

Mr. Crandall studied Mark's figures carefully. Of course he was aware of the fact that prices had changed since 1928, but he had never realized how much they had changed. He stood up, tucked his budget book under his arm and turned to his fourteen-year-old daughter, "Janie, I guess we'll have to raise your allowance."

c. Suggested questions for focusing discussion:

In this learning situation we have described an idea which the students may have vaguely sensed before; namely, that as prices increase the value of money decreases and vice versa. In other words, prices and the value of money move in opposite directions. In the story, Mr. Crandall failed to realize the importance of this inverse relationship between changing prices and the changing value of the dollar. Rather than having the teacher make an expository statement of this inverse relationship, the following questions suggest possible general points in a discussion aimed at affording students the opportunity of discovering the relationship for themselves:

(1) If prices had not changed between 1928 and 1965, what would be your conclusions about the value of money during this period?

(2) If the prices of things that you generally buy are increasing, what is happening to the value of the dollar?

(3) If you are told that in a certain country the value of money increased over a five-year period, what would you expect has happened to the general level of prices in that country?

(4) Can you write a statement describing the relationship between prices and the value of money? Condense this statement into the fewest possible number of words that will adequately describe the relationship.

2. Second Situation: Establishing a Price Index (Student Materials, page 598)

a. The story, "The Good Old Days", in the first learning situation illustrated the inverse relationship between prices and the value of money. We know from Unit 7 that the Gross National Product is expressed in money terms. We say that the GNP for 1964 was 622 billion dollars and the GNP for 1942 was 159 billion dollars. Have prices changed from 1942 to 1964? Yes. Then we can assume that the value of the dollar has also changed. But, how much has the value of the dollar changed? This learning situation and the next one will illustrate the process used by economists to determine how much the value of money may have changed over a given period of time. We know that an inverse relationship exists

between prices and the value of money. If we can create some device (a price index) for determining how much prices have changed over a period of time, then we can indirectly discover what changes have occurred in the value of money over the same period of time.

b. In the first situation we used only five items (ice cream sodas, gasoline, a shirt, a haircut, and movie tickets) to illustrate changing prices. If we wished to be more accurate, we would have to use hundreds of items before we could feel confident that we were giving a correct picture of price changes. The prices of the five items in the story all increased, but perhaps if we had chosen five other items, we might have found that the prices for those items all decreased. Another question we could ask is, are the prices for all the items increasing or decreasing at the same rate?

Our investigation of economics has brought us to a point where we recognize the importance of comparing the GNPs of a nation over a period of time; but before we can make any comparisons, we will have to solve this problem created by changing prices. The following sequence of questions are suggested for initiating a discussion at the beginning of this learning situation:

(1) When we say that the GNP for the United States was $622 billion in 1964, what does this figure mean?

(2) What is the purpose of comparing the GNP for the United States in say 1942 with the GNP in 1964?

(3) If we know that the GNP in 1942 was $159 billion and the GNP in 1964 was $622 billion, can we conclude that our economy is producing over four times as much now as it was producing in 1942?

(4) If the value of the dollar has changed from 1942 to 1964, how can we determine <u>how</u> <u>much</u> the value of the dollar has changed?

(5) If price changes indicate to us the changing value of the dollar, then how will we determine the extent to which prices have changed? Which items from all the things we buy will we include in our comparison list? Do you expect the prices of these items on our list to all show an increase or a decrease? Do all the prices increase or decrease at the same rate?

(6) How could we mathematically overcome this problem of some items increasing in price while other items decrease in price and at the same time overcome the problem of their increasing and decreasing at different rates?

c. If we try to compute an average of prices with a long list of items, and if we use real prices for actual years, we will become involved in some very cumbersome mathematical calculations. The following table includes only five items and the prices are "rigged" so that the mathematical relationships will be clear.

Except for the small number of items, the important mathematical problems focused upon in the discussion of the above questions are included in Table 1. If the students inspect the price changes in each item, hopefully they will discover examples of the mathematical nature of the problem.

Table 1: Fictional Prices for Three Given Years

Item \ Year	Prices		
	1940	1950	1960
A tube of toothpaste	$ .50	$ .40	$ .70
One pound of steak	.30	.60	1.50
One pound of potatoes	.20	.15	.10
One baseball bat	1.40	3.35	4.70
One car wash	.60	1.50	2.00
Total	$3.00	$6.00	$9.00

You will note that the mathematical problem of comparing prices when some items show an increase (e.g. bat, car wash, and steak) and some items show a decrease (e.g. potatoes) is included in the table. Also, the rates of increase and decrease of changing prices show a variation (e.g. potatoes decrease in price at a uniform rate while the rate of increase in the price of steak is non-uniform and toothpaste shows a fluctuation).

d. By this point, hopefully the students see why an average of prices is necessary to compare the prices of one period and the prices of another. The next step is to make use of the average of prices so that the changes in the value of the dollar will be taken into account. The following is a suggested presentation of this idea:

The problem of comparing the prices of say 1928 with the prices of 1964 is complicated by the fact that the value of the dollar has changed over the years. If one were given a sack of mixed coins from many countries and were asked to add them together to get one total, one would have to convert

all the coins into a common denominator. What we are saying here is that before two prices which reflect different values of the dollar can be compared, they must be reduced to a common value.

Before prices may be compared, one must decide on a value for the dollar which will then be used as a standard or base on which to make comparisons. When the prices in certain years are being compared, one given year is designated as the base year, and the average price in that year is represented by the number 100. Actually, any number could be used, but 100 enables comparisons to be made as percentages--i.e. average prices in other years can be expressed as a percentage greater or less than the base year price.

To summarize, when the average price levels for two or more years are to be compared:

(1) The average price level of one year must be chosen as a base.

(2) The average price level in the base year is represented by the number 100. This number becomes the common denominator or base number.

(3) The average price levels of other years can then be expressed as index numbers greater than, equal to, or less than 100.

e. We will now apply the idea of an index to the prices listed in Table 1. Since Table 1 contains five items, an arithmetic average of prices in each of the three given years is obtained by simply dividing the total of prices for each year by five.

If we arbitrarily select 1940 as the base year, the average of prices in that year ($.60) is represented by the price index 100. (The figures given for the years 1940, 1950, and 1960 are fictional and bear no relationship to actual prices.) What is the price index for 1950 (in which the average of prices was $1.20)? The price index for 1950 will bear the same relationship to the price index for the base year (100) as the average of prices for Year 2 bears to the average of prices for the base year. This can be expressed in the following equation:

$$\frac{\text{Price index for 1950}}{\text{Price index for base year}} = \frac{\text{Average of prices for 1950}}{\text{Average of prices for base year}}$$

This can be read: The price index for 1950 is to the price index for the base year as the average of prices for 1950 is to the average of prices for the base year. Using Table 1 and our knowledge that the base year is given an index number of 100, we can fill in all but one term in the equation:

$$\frac{PI_2}{100} = \frac{1.20}{.60}$$

with "PI_2" standing for the price index for 1950. Some students may know how to solve this equation:

$$.60PI_2 = (100)\ (1.20)$$

$$PI_2 = \frac{(100)\ (1.20)}{.60}$$

$$PI_2 = 200$$

The price index for 1950, then, is 200. Once the students understand the proportional relationships expressed in the definitional formula above, it is easier for them to compute the price index using another formula. Note above that:

$$PI_2 = \frac{(100)\ (1.20)}{.60}$$

The students can substitute in this formula in the following manner:

$$PI_2 = \frac{\text{(Price index for base year)}\ \ \text{(Average of prices for 1950)}}{\text{(Average of prices for base year)}}$$

So, substituting the term "price level" for "average of prices," a general computational formula can be written as:

$$\text{Price index} = \frac{\text{Price index for base year (100) x Price level in a given year}}{\text{Price level in the base year}}$$

The same procedure as used in computing the price index for 1950 can be used in computing the price index for 1960. Table 2 summarizes this information:

Table 2: A Simplified Example of a Price Index

Year	1940	1950	1960
Total of prices for each year	$3.00	$6.00	$9.00
Average of prices for each year (Total ÷ 5)	$ .60	$1.20	$1.80
Price index (1940 as the base year = 100)	100	200	300

Students may be asked to compute the price index for 1940 and 1960 in Table 3 below:

Table 3:

Year	1940	1950	1960
Total of prices for each year	$3.00	$6.00	$9.00
Average of prices for each year (Total ÷ 5)	$ .60	$1.20	$1.80
Price index (1950 as the base year = 100)	50	100	200

After the students have computed the price indexes, a brief discussion of the meaning of these numbers should be helpful. What kind of statements can the students make about the comparative average of prices in the three years?

We have chosen prices for the items in Table 1 whose totals bear an obvious relationship to each other (i.e. $6.00 is twice as great as $3.00 and $9.00 is exactly three times as great as $3.00). In reality, usually neither the total nor the average of prices for several years bear such obvious relationships.

In the student materials, forms are provided for computing the price indexes using 1950 as the base year. Using 1950 as the base year will introduce students to the idea that some index numbers may be less than 100.

3. Third Situation: Comparing GNPs in terms of Constant Dollars (Student Materials, page 600)

   a. The first situation in this unit illustrated the inverse relationship between changing prices and the changing value of the dollar. Next, the use of a price index system allowed us to standardize the value of the dollar over a period of time. Now we are ready to translate the Gross National Products for several given years into standardized dollars, that is, dollars that have a constant value. Only after we have translated the GNPs for several given years into dollars that have a constant value, can we compare these important GNP figures to determine the increase in real GNP for the nation.

   b. The following questions are suggested for focusing the discussion at the beginning of this learning situation:

(1) In 1942 the GNP of the United States was $159 billion and in 1964 the GNP was $622 billion. The 1942 figure is given in terms of what the dollar would buy in 1942. Likewise, the 1964 figure is in terms of what the dollar would buy in 1964. Why would it be incorrect to assume from just these figures that the GNP of the United States increased almost four times from 1942 to 1964?

(2) In the second learning situation we found that the value of the dollar must be standardized before any meaningful comparison of GNPs can be made. Consequently, there are two ways in which the GNP for a certain year can be expressed: (1) in Current Dollars and (2) in Constant Dollars.

Current GNP refers to the GNP for a certain year in terms of the value of the dollar in that year. Constant GNP refers to the GNP for a certain year in terms of the value of the dollar in some chosen base year.

c. In Tables 2 and 3, at the close of the second learning situation, we arrived at index numbers for the prices in the three years included in our illustration. Suppose we are given the GNPs for these three years in Current Dollars, how would we go about changing the GNPs to Constant Dollars? Table 4 sets out the information needed to compute the GNPs in terms of Constant Dollars with 1940 as the base year. (The last column is blank in the Student Materials.)

Table 4: Changing GNP in Current Dollars to GNP in Constant 1940 Dollars

Year	Price Index	Current GNP*	Constant GNP
1940	100	$ 500	$500
1950	200	1,000	500
1960	300	2,100	700

Note again that the value of the dollar is inversely related to price level. Therefore, when the price index for a given year is 200, as in 1950, we say that the value of the dollar is one-half that of the base year. It is this proportion:

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*Figures are fictional.

$$\frac{\text{Price index for the base year}}{\text{Price index for the given year}} = \frac{100}{200} = \frac{1}{2}$$

that we will use in computing the Constant GNP for 1950. By multiplying the Current GNP for 1950 by 1/2, we "convert" the 1950 dollars into their value in 1940 prices. We have, then:

$$\text{Constant GNP (1950)} = \frac{\text{Price index (1940)} \times \text{Current GNP (1950)}}{\text{Price index (1950)}}$$

Substituting numbers from Table 4, we have:

$$\text{Constant GNP (1950)} = \frac{100}{200} \times 1{,}000 = \$500$$

The Constant GNP for 1960 can be computed in the same manner.

The students at this point should be able to state a general formula in the following terms:

$$\text{(Constant GNP for a given year)} = \frac{\text{Price index for base year} \times \text{Current GNP for a given year}}{\text{Price index for given year}}$$

As the price index for the base year is always 100, the formula can be written:

$$\text{Constant GNP} = \frac{100 \times \text{Current GNP}}{\text{Price index for given year}}$$

Since the beginning of the second learning situation, we have been discussing the problems involved in comparing the Gross National Products of two given years. To be specific, the question was asked, "How can we compare the GNP for the United States in 1942 with the GNP in 1964?" The GNP for 1942 ($159 billion) is given in terms of the prices current in 1964. Using 1964 as a base year for prices, the Department of Commerce has calculated the price index for 1942 at 47.4. With this information, we can now express the GNP for 1942 in terms of Constant (1964) Dollars using the formula given above:

$$\text{Constant GNP} = \frac{100 \times \text{Current GNP}}{\text{Price Index}}$$

$$\text{Constant GNP (1942)} = \frac{100 \times \$159 \text{ Billion}}{47.4}$$

$$\text{Constant GNP (1942)} = \$314 \text{ Billion}$$

When we looked at the GNPs for the two years expressed in Current Dollars, it appeared that the GNP for 1964 was almost four times as large as the GNP for 1942. But when we compare the GNPs for the two years expressed in Constant Dollars, we see that the GNP for 1964 is actually only twice as large as the GNP for 1942.

d. The students should have an opportunity to correct actual U. S. GNP figures for several selected years. In Table 4, the base year is 1954. The choice of 1954 as a base year allows us to illustrate index numbers greater than and less than 100. In the Student Materials, column four is blank. Before the students calculate the actual GNP figures in Constant (1954 = 100) Dollars, a brief discussion of what changes they may expect to find based on the index numbers alone may give the teacher an indication of how well they understand the mathematical relationships involved in the computations.

Table 5: Translating GNP from Current to Constant Dollars*

Year	Price Index Number	Current GNP	Constant GNP 1954 = 100
1929	57.4	$104.4 Billion	$181.8 Billion
1933	44.2	56.0 "	126.6 "
1941	52.9	125.8 "	237.8 "
1945	68.0	213.6 "	314.1 "
1954	100.0	363.1 "	363.1 "
1961	116.2	521.3 "	448.6 "
1964	119.8	622.6 "	519.7 "

Source: Department of Commerce, "Survey of Current Business," February, 1962 and U. S. Congress, Joint Economic Committee, "Supplement to Economic Indicators," Washington, D. C., 1964.

After the students have computed the GNPs in terms of Constant (1954 = 100) Dollars, the following questions are suggested as a focus for discussion of Table 5 and as a linkage to the next unit:

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*Unlike the figures in previous examples these figures are the actual GNPs for the years given.

(1) In 1933 the United States was in the depths of a depression and the value of the dollar was greatly reduced. If 1933 were chosen as the base year, what effect would this have on the GNP in Constant Dollars? What does this say about the choice of a year as a base year?

(2) What incorrect conclusions could be drawn from a comparison of GNPs expressed in terms of Current Dollars?

(3) In terms of Constant Dollars, what trends appear to be present in the GNP figures for the United States?

THE FLOW OF GOODS AND SERVICES AND THE FLOW OF MONEY

Unit 9: Definition of Economic Growth

Part I: Sequenced Outline

I. We know now that there are two flows which are equal in value. We also know that the size or magnitude of the flows is measured in money. To compare one period with another, it is necessary to correct for the changes in prices which may have occurred. When the correction has been made, we have referred to the result as the Constant GNP. The Constant GNP usually is also called the Real GNP. In this unit, we will analyze Economic Growth, defined as changes in the Constant or Real GNP per capita.

II. First we need to make a few more comments about the Constant (Real) GNP.

A. When the Current GNP has been corrected for price changes, the adjustment applies only to prices. But other changes may have taken place, for example, in the quality of automobile tires. The Constant (Real) GNP does not take such changes into account, but it is possible to consider adjustments for changes in quality. Although it is possible to make such adjustments, we will not consider this type of modification. We will assume that the product has not changed, but the prices have. We correct then only for the change in prices.

B. But we must ask further, "Even if the Constant (Real) GNP has increased, is this the same thing as economic growth?" Economists say, "No!" There may have been changes in population. Hence, economic growth is defined as changes in the Constant (Real) GNP per capita (per person). By this definition, we have taken into account the number of people who will be using the Constant (Real) GNP.

1. The Constant (Real) GNP, in 1964 prices, increased from 1946 to 1964 as follows:

$$\begin{matrix}(1964)\ \$622.3\ \text{Billion} \\ (1946)\ \$337.9\ \text{Billion}\end{matrix} = 184.1\%\ \text{or}\ 84.1\%\ \text{higher.}$$

2. But population increased markedly during those years, so the Constant (Real) GNP per capita increase is as follows:

$$\frac{\frac{\$622.3\ \text{Billion}}{192\ \text{Million}} = \$3,241}{\frac{\$337.9\ \text{Billion}}{141\ \text{Million}} = \$2,314} = 140.1\%\ \text{or}\ 40.1\%\ \text{higher.}$$

In other words: The Constant (Real) GNP increased by 84.1%, but the population increased 36.1%. The increase in population reduced the percentage increase in the Constant (Real) GNP per person.

Data on rates of economic growth may be found in the Statistical Abstract of the U.S. (annual).

III. In this unit, we will limit ourselves to a study of sources of change in the Constant (Real) GNP. We will not examine the reasons for changes in population.

A. Changes in the Constant (Real) GNP may arise from:

1. An increase in production or output from greater inputs of the factors of production.

2. An increase in production or output from increased productivity (efficiency) in the use of the factors of production.

3. From a combination of 1 and 2.

B. In Unit 5, we have already discussed the notions of production and productivity. We needed to make these distinctions then in order to define efficiency (productivity). Now we are applying these distinctions to see how they help in analyzing the sources of change in the Constant (Real) GNP.

C. As we know from Unit 8, production or output may be measured in either Current or Constant Dollars. With either measure, we can find out the change in production or output.

$$\frac{\text{Current GNP (1964)}}{\text{Current GNP (1963)}} = \frac{\$622 \text{ Billion}}{\$548 \text{ Billion}} = 106.5\% \text{ (i.e. 6.5\% higher).}$$

$$\frac{\text{Constant GNP (1964)}}{\text{Constant GNP (1963)}} = \frac{\$622 \text{ Billion}}{\$595 \text{ Billion}} = 104.5\% \text{ (i.e. 4.5\% higher).}$$

We have found the percentage increase in production or output, but we cannot tell from the results why or how the increases occurred.

D. Illustration of A-1, above: An increase in production or output from greater inputs of the factors of production.

1. During World War II, the increase in the Constant (Real) GNP was due mainly to greater inputs.

	GNP (1964 prices)		Mf'g		Non-Agri. Workers	
	Am't	%	Hours	%	No.	%
1939	$227.3 Billion	100	37.7	100	30.6 Million	100
1944	$401.7 Billion	177	45.2	120	41.9 Million	137

2. These figures show that the Constant (Real) GNP increased 77%, but the number of workers increased 37% and <u>all</u> the workers worked 20% longer. Obviously, the World War II increase in output came mainly from greater inputs. The example shows only the greater use of one input, labor, but the other factors were also used in greater amounts.

E. Illustration of A-2, above: An increase in production or output from increased productivity (efficiency).

1. Using our illustration of Unit 5, we already know that productivity is measured by the amount of output obtained from a given amount of input.

2. Now, an <u>increase</u> in productivity extends the notion of productivity (efficiency). We are now comparing the productivity of a certain year or period with that of a previous year or period.

   a. A familiar way of making the comparisons is to use the idea of output per man-hour. The notion of man-hours is the number of people working multiplied by the number of hours. Thus, two persons each working 8 hours would equal 16 man-hours.

   b. <u>Warning</u>: In using man-hours as the measure of inputs, one could conclude that the gain is due entirely to labor. Obviously, the other factors will also have contributed to the output.

3. Now, we may use our knowledge of the gains in Constant (Real) GNP and the notion of man-hours, to show how one could calculate the increase in efficiency as the increase in output per man-hour.

   Output = Constant (Real) GNP (private part of economy only)

   Input = man-hours

   For both of these, the years 1957-59 equal 100%, that is, we take the output in these years, averaged, and call that figure 100%, and likewise for the man-hours. In short, we will use index numbers for both output and input.

   Then we can measure the increase in productivity for 1964 over the 1957-59 period by this formula:

$$\frac{\text{Output increase}}{\text{Input increase}} = \frac{125.6}{104.2} = 120.5\% \text{ increase in output per man-hour } (1.205 \times 100)$$

4. The Constant (Real) GNP increased by 25.6% and the input of man-hours by 4.2%. The output <u>per man-hour</u> increased then

by 20.5%. The increase in output was greater than the increase in input, so we conclude that the greater output came from increased productivity or efficiency.

5. Of course, the increase in labor input was likely joined by an increase in the input of the other factors of production. Just to keep the example simple, we will assume that all of the inputs were increased by 4.2%.

6. Data on output per man-hour can be found in the Statistical Abstract of the U.S. and in the Economic Report of the President.

7. Warning: Possible Confusion

   Contrast: Economic Growth = Constant (Real) GNP per capita.
   Productivity = Constant (Real) GNP per man-hour.

   Economic Growth tells how much we have per person; gains in productivity tell how much the increase in output was due to a more efficient use of resources (inputs).

IV. Relation to other disciplines (illustrations)

A. Geography: The notion of economic growth can be useful in geography because it makes clearer why one area may yield a higher standard of living than another. The gain in one area may come from working harder (more inputs) and in another from greater efficiency in the use of the inputs.

B. Sociology: While we have not dwelt upon changes of population in this unit, obviously many sociological factors influence the rate of population growth.

C. Political Science: Often the goals of a society are economic in nature, but politically determined. We may ask then, "How much does the goal of economic growth depend upon the public's ability to define it?"

D. Psychology: An interesting aspect of economic growth is that an economy could show an economic growth of 3%, say, but it is easy to get used to 3% more and not realize the amount of growth over a period of years.

E. History: Both in the history of developed and developing countries, an important element is the rate of economic growth.

THE FLOW OF GOODS AND SERVICES AND THE FLOW OF MONEY

Unit 9: Definition of Economic Growth

Part II: Outline of Teaching Suggestions

I. Comments on the Content

A. Problems in teaching the concept

1. This unit extends the notion of the use of the Constant (Real) GNP.

2. The extension consists of comparing or using ratios. Comparisons always present problems, for it is necessary to be most precise about what is being compared. Note the warning given about the possible confusion between economic growth and productivity. (Part I,III E).

3. Although this unit is devoted to economic growth, you will note that the concept has not been fully treated. Economic growth is defined, but we decided not to analyze the influences on the changes in population. We focused on the factors accounting for changes in the Constant (Real) GNP for two reasons: (1) The analysis of changes in population is mainly sociological, (2) but the analysis of the changes in Constant (Real) GNP is economic.

B. The concept as part of the unfolding structure

1. Scarcity: The notion of economic growth extends the implications of scarcity, since the relation of Constant (Real) GNP to population is a measure of the amount of goods and services available per person.

2. Flows: Changes in Constant (Real) GNP and a study of the sources of change are parts of the analysis of the rate and causes of change in the flows.

3. Coordination: Economic growth, one of the goals of an economy, will influence the coordination of economic activity towards this end.

4. Marginal analysis: The comparisons involved in the notion of economic growth measure one period of time against another, and the gain or loss represents the addition (marginal) to the Constant (Real) GNP which may have taken place and also the addition to Constant (Real) GNP per person.

5. Institutional factors: Increasing the Constant (Real) GNP by a greater input of the factors of production, as in World

War II, represents a change in attitude and policy about the number of people who will join in the labor force and the number of hours they will work.

II. Comments on the Learning Process

A. Vocabulary: In this unit, the words which may offer difficulty are chiefly terms expressing simple, basic mathematical relations, e.g. rate, per capita, ratios. These will be commented upon in B below.

B. Mathematical concepts and skills

1. The basic mathematical ideas in this unit have been encountered in previous units, e.g. output over input, etc.

2. In the mathematical illustration of economic growth (Part I, II B 2), we are using a complex fraction, but this notion has already been used and commented on in Unit 5.

3. In the discussion of the increase in efficiency, we repeated in this unit what had been covered in Unit 5, namely, that at two different periods of time the same amount of inputs yield different outputs. But we have gone on to show how to compute the percentage increase in Constant (Real) GNP when both outputs (numerator) and inputs (denominator) have both increased, <u>but at different rates</u>. Of course, one can think of other combinations, such as decreases in output and increases in inputs.

4. Note the two warnings, for each illustrates a different difficulty in the careful definition of terms. The first applies to the use of <u>one</u> input only as a denominator, the second to the problem of having the same numerator but a different denominator.

C. Ability to generalize

1. In this unit, the ability to generalize depends primarily on the insight the student has into comparisons.

2. In defining clearly the terms of the comparison, the student is led to see that quite often a generalization is a precise and narrow relationship and not always a broad application of an idea.

D. Background

1. The notion of economic growth can be translated in family experience by asking what is Dad's real income and how many are there in the family.

2. The general notion of getting more for one's effort (output over input) often clashes with another cliche, namely, you get out of something what you put into it. These notions can be used to show the student the need for more careful definitions.

III. Learning Situations

A. From Teacher to Teacher

In Units 7 and 8, the discussion of flows was concentrated on the problems involved in measuring the magnitude of the flows. The need for a device that would measure the value of the total output of a whole society led to the creation of an accounting framework on a national scale. In the United States, this attempt to measure the value of the total output for a year is designated as the Gross National Product.

This unit illustrates one extremely important use that a society can make of GNP figures which extend over a period of several years; namely, the measurement of economic growth. These illustrations will continue to use the version of GNP developed in the United States. Even though the conceptual frameworks may differ, most societies are interested in having some measure of economic growth. The specific questions raised by an investigation of growth in the U. S. economy are grounded in more general questions that have relevance for all societies.

The first learning situation deals with the problem of establishing a definition of economic growth. Over a long period of time the quality of goods and services changes. These changes in quality are very difficult to assess.

In this introductory discussion of growth, qualitative changes will not be emphasized. More time will be spent in the second situation on the relationship between the size of the population of a society and the real GNP. Using an operational definition of economic growth (Real GNP per capita) provides a measure of the amount of growth. The computation of growth in these terms is discussed in the second learning situation.

The third learning situation presents a setting for a discussion of the ways in which economic growth may occur through increased inputs or through productivity gains. Unit 5 introduced these terms; this situation develops them by applying them to the concept of economic growth.

Units 10, 11, 12, and 13 will explore the means and the processes involved in expanding productivity. Although economic growth is a fundamental goal of our society, we will see in later units that other goals such as stability, equity, full employment and other cultural, social, and political goals have a bearing on the choice of an optimum rate of growth.

B. Sequenced Learning Situations

1. First Situation: The Problem of Measuring Economic Growth (Student Materials, page 603)

a. The past unit suggested that one of the reasons for calculating Constant GNP figures was to enable us to make meaningful comparisons between the size of the GNP in one period with the size of GNP in another period. Has the size of the GNP changed? At what rate has the size of the GNP changed? These questions lead us to a consideration of the concept of economic growth.

b. The first situation creates a setting for a very brief discussion (15-20 minutes should be sufficient) that illustrates the difficulties involved in arriving at a definition of economic growth. Rather than start the lesson with an expository definition, it is suggested that the following approach be used to involve the students in the problems of defining economic growth:

This situation may be introduced by asking students to suggest different ways in which a <u>person's</u> growth may be measured:

Height in inches
Weight in pounds

A <u>city</u> may also have its growth measured by considering

Area
Population
Number of bath tubs
Number of schools

All these are different aspects of growth but:

Does growth measured in area tell us anything about the growth in population?

Does growth measured in schools tell us anything about the area growth?

No one measure of growth reflects all other important aspects of growth. How, for instance, does one compare the beauty of a city park in one year with its beauty in another?

The difficulties involved in measuring the overall growth of individuals or cities are also present in any attempt to measure economic growth. This may be illustrated by confronting the class with two items which have shown a

marked change in design, quality and price over a period of years.

An example of this might be shown by comparing two portable phonographs advertised in Sears Roebuck Catalogues - one a current model and the other a model that was sold in 1929. After adjusting the price for the 1929 phonograph to 1964 dollars, the prices of both phonographs are approximately the same. Have students read the advertisements for these phonographs and then discuss the changes in quality and design that have occurred. How would you measure these qualitative changes in dollars and cents?

Advertisement for 1929 Model

The Super De Luxe is the equal of any portable phonograph ever made regardless of price! We have improved it, refined it in appearance, added new features and, best of all, we've reduced the price. Now it is vastly superior in tone, in quality, in appearance and durability. It's the super value of all portables. The greatest and most outstanding feature of the Super De Luxe is its powerful, vibrant pure tone.

Another super feature is its long playing, highly perfected motor--a genuine Silvertone motor--absolutely the best that has ever been built into a portable, regardless of name, style or price. With one full winding it plays three 10-inch records.

It is the lifetime instrument--sturdily built to endure every hardship of rough usage indoors and outdoors the whole year through. All exterior hardware is solid brass with harmonizing finish. It won't rust, it won't come loose. Case covered with durable, genuine Du Pont Fabrikoid in dark rich Spanish Blue or Red. Needle cup has spring cover to prevent needles from falling out.

Advertisement for 1964 Model

Compact . . high-quality sound at a low price. Full stereo from two removable 4-inch speakers. Powerful amplifier; volume, tone, balance controls. Automatic 4-speed changer, shut-off . . order 45-rpm adapter below. Dual synthetic sapphire needle. Washable blue covering, white interior and ends. 9 1/2 x 19 1/2 x 15 inches.

The problem involved in measuring the qualitative changes in any one item, say a phonograph, is multiplied many times when we attempt to measure the quality changes in the vast number of items which make up the GNP. Economists generally consider only the total monetary value of the output of a society when measuring economic growth. While other changes are important, it is difficult to measure them in quantitative terms. Therefore, they are not used in calculating GNP.

2. Second Situation: Measuring Economic Growth in Terms of Population (Student Materials, page 604)

   a. In the first situation we concluded that although qualitative changes in products and services are important, it is extremely difficult to measure such changes. Economists, therefore, use only changes in the constant dollar value of the total output (Constant GNP) as a measure of economic growth. Even this measure of economic growth, however, is inadequate for some purposes. Have the students consider the case of Mr. Marcel outlined below. What implication does this individual case have for measuring a nation's economic growth?

      In 1955, Mr. Marcel earned $6,000. With this money he supported three persons; himself, his wife and his son. By 1960, his income had increased to $7,500 while his family size remained the same. His income remained at $7,500 per year throughout the next five years, but by 1965 his family had grown to five persons with the birth of another son and a daughter. Table I below summarizes this information:

Table I: Mr. Marcel's Income Related to the Size of His Family

Year	Income	Family Size	Amount of Income Per Person
1955	$6,000	3	$2,000
1960	7,500	3	2,500
1965	7,500	5	1,500

   b. Suggested focus questions for discussion:

      (1) What kind of statements could be made about the Marcel family's income between 1955 and 1965 according to the information given in Table I? What changes took place? Can we say for sure that they are "better or worse off" in 1965 than in 1955?

      (2) Why is a comparison of total incomes an inadequate way of measuring the Marcels' income?

      (3) If we do not consider such things as changes in the quality of their food, home, car, etc., how can we best compare their economic standing in different years?

   c. It should be pointed out to the students that the foregoing illustration is not a miniature of how a nation's

economic growth is measured. That kind of measurement is done only by making use of the GNP. We used the Marcel family's income only to show that the number of persons sharing in the total income is one of the things that should be considered before any meaningful statements about the family's economic standing can be made. The same may be said about the nation's economic growth and its population.

Table II: Constant GNP Per Capita for Selected Years*

Year	1 GNP 1929 Index = 100	2 Population (Approx.)	3 Constant GNP Per Capita
1900	$ 37 Billion	76 Million	$ 487
1910	55 "	92 "	598
1920	73 "	106 "	689
1930	95 "	123 "	772
1940	121 "	132 "	917
1950	187 "	151 "	1,238
1960	480 "	178 "	2,697

Source: Figures in column 1 and 2 are rounded and are taken from U. S. Bureau of the Census, Historical Statistics of the United States, Colonial Times to 1957, Washington, D. C., 1960, pp. 8 and 139 (1960 figures derived from data in U. S. Bureau of the Census, Statistical Abstract of the United States, 1964, Washington, D. C., 1964).

(1) Using only the figures in column 1, what kind of statements could be made about the economic growth of the U. S. between 1900 and 1960? (between 1920 and 1930, 1950 and 1960?)

(2) How do these statements need to be modified when population growth is considered? (column 1 compared to column 3)

Per person or per capita GNP is often a more meaningful way of describing economic growth because it takes into consideration changes in the population.

3. Third Situation: Economic Growth - Inputs and Efficiency (Student Materials, page 605)

a. The two previous situations have illustrated some of the problems involved in determining the economic growth of a society. In order to get some measure of growth, economists rely upon GNP figures that have been adjusted for price changes (Constant GNP). For some purposes such as measuring the military potential of a nation, growth can be measured solely on the basis of changes in constant GNP. For other purposes, however, a more meaningful measure of growth is obtained by measuring the changes in per capita constant GNP. This second measure of economic growth is the one generally used to measure the material well-being of a society.

In what ways can the amount of constant GNP per capita be increased? Increasing the amount of constant GNP per capita depends upon the ability of a society to increase the constant GNP faster than the increase in its population. This learning situation will not take up the causes of population increase; it will concentrate instead upon the sources which promote changes in the constant GNP.

b. Changes in the Constant GNP may arise from:

(1) An increase in output from greater inputs of the factors of production.

(2) An increase in output from increased productivity (efficiency) in the use of the factors of production.

(3) From a combination of (1) and (2) above.

In most cases an increase in constant GNP results from a combination of increased inputs and increased productivity. At times, however, one source predominates to such a degree over the other that we speak of the gain in constant GNP as due to that source. The story of the small grass-cutting business below illustrates each of the sources of change separately. The more complex relationship in which both sources are acting simultaneously is illustrated by the two actual experiences of the American economy which follow:

First Illustration:

Relax, and Leave the Grasscutting to Us

Larry, Jerry, and Tony, three teenage boys, set up a small grass-cutting business last summer. By pooling their resources, they were able to

guarantee their customers prompt and continuous lawn care over the whole summer. They received $36 in the month of June for their services. Since the total number of hours worked by the three boys was eighteen hours, they calculated the value of their output per hour as follows:

$$\frac{\text{Total Value of the Output}}{\text{Total Man-hours Worked}} = \text{Value of the Output Per Man-hour}$$

$$\frac{\$36}{18 \text{ Man-hours}} = \$2 \text{ Per Man-hour}$$

Toward the end of June, four new customers asked to have their lawns cared for by the boys. Rather than reduce their swimming and baseball time in order to cut the additional lawns, the boys decided to add another partner, Mike, to their business.

In July, the four boys worked a total of twenty-one hours and received $42 for their services.

Questions for Focusing Discussion:

(1) By what amount did the total value of the output increase in July over that of June?

(2) How many more man-hours were worked in July compared to June?

(3) What happened to the output per man-hour in July compared to the output per man-hour in June?

(4) What was the source of the increase in total output?

During the month of August, the four boys worked out a system in which they cut the lawns in teams. One boy on each team cut the grass while the other took care of all the trimming around plants and walks. Using this new system, they were able to care for the lawns of two additional customers and still reduce the total number of hours worked to twenty. They received $45 in August for their services.

Complete the following table using the information supplied in the story:

Table III: Measuring Output Per Man-hour

Month	Total Value of the Output	Labor Inputs (Total Number of Hours Worked)	Value of the Output Per Man-hour
June	$36	18	$2.00
July	42	21	2.00
August	45	20	2.25

Note: The table is not completed in the Student Materials.

Questions for Focusing Discussion:

(1) What happened to the output per man-hour for August compared to that of July?

(2) What was the source of the increase in total output for August?

Total output continued to increase in both July and August, but the source of the increase was different in the two months. In July, the increase in total output was due to increased inputs while the increase in total output for August was due to productivity (efficiency) gains.

Second Illustration:

Table IV shows the large increase in total output (Constant GNP) that occurred during the years from 1940 to 1944. What is the source primarily responsible for this increase in output?

Table IV: Outputs Compared to Labor Inputs for 1940 and 1944

Year	Outputs (GNP in 1954 Prices)	Labor Inputs (Man-hours Per Year)	Output Per Man-hour
1940	$205,800,000,000	109,096,000	$1,886
1944	317,900,000,000	156,676,000	2,029

The output has increased 54% while the labor inputs have increased by 43%.

Sources: J. Frederic Dewhurst, America's Needs and Resources, Twentieth Century Fund, New York, 1955, pp. 1064-1065; and U. S. Bureau of the Census, Historical Statistics of the United States, Colonial Times to 1957, Washington, D. C., 1960, p. 143.

Third Illustration:

Table V shows an increase in the total output (Constant GNP) that occurred during the years from 1949 to 1953. What is the source primarily responsible for this increase in output?

Table V: Outputs Compared to Labor Inputs for 1949 and 1953

Year	Outputs (GNP in 1954 Prices)	Labor Inputs (Man-hours Per Year)	Output Per Man-hour
1949	$292,700,000,000	127,608,000	$2,293
1953	369,000,000,000	136,448,000	2,704

The output during this period increased by 26%, while the labor inputs increased by 7%.

Sources: J. Frederic Dewhurst, America's Needs and Resources, Twentieth Century Fund, New York, 1955, pp. 1064-1065; and U. S. Bureau of the Census, Historical Statistics of the United States, Colonial Times to 1957, Washington, D. C., 1960, p. 143.

Notice that in both periods the output per man-hour increased. But in the period from 1940 to 1944 it increased by only $143 per man-hour ($2,029 minus $1,886) while in the period from 1949 to 1953 it increased by $411 per man-hour ($2,704 minus $2,293). These actual figures do not illustrate the two sources of output increases quite as clearly as the lawncutting example. In that instance it was easy to see that in July the increase was due to increased inputs and in August the increase was due to productivity (efficiency) gains. In actual practice, however, there is no such clear distinction--both sources contribute to the increase in output during both periods. It is possible, however, to make a reasoned guess as to which source, increased inputs or increased efficiency, is primarily responsible for the increase in output during each period. Economists, as do persons in other sciences, call such reasoned guesses hypotheses. What kind of additional information would you need in order to check whether or not your hypothesis was correct?

THE FLOW OF GOODS AND SERVICES AND THE FLOW OF MONEY

Unit 10: Composition of the GNP

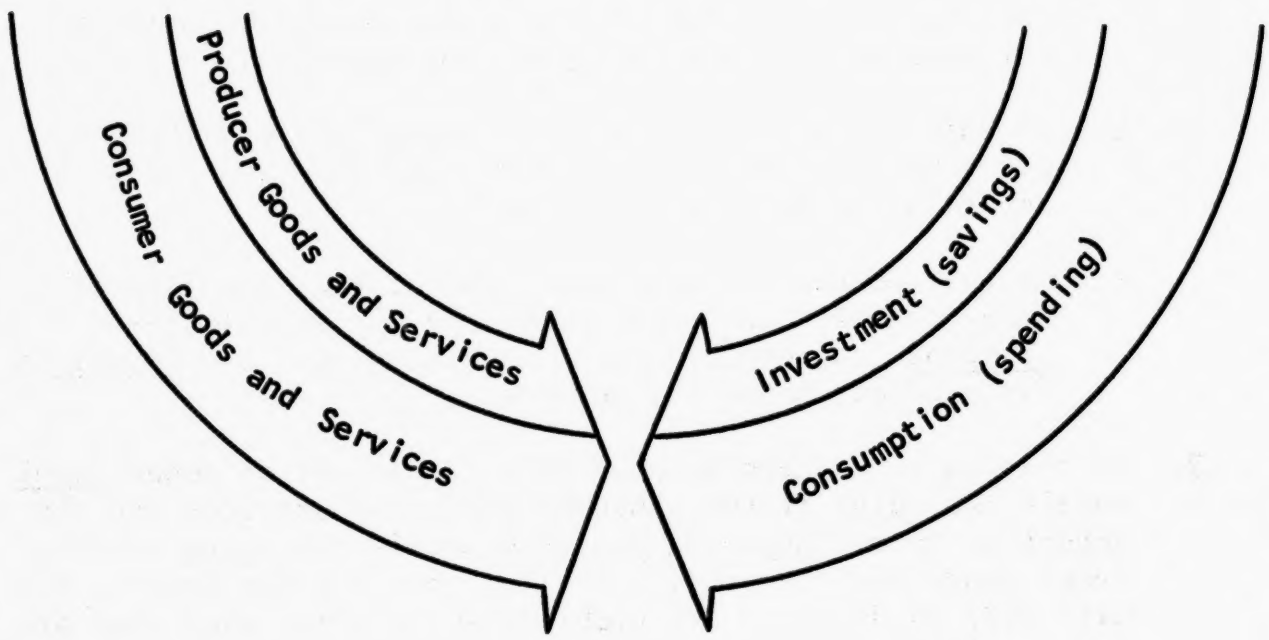
Part I: Sequenced Outline

I. So far in our analysis of flows we have established that there are two flows (Unit 7), that the size of the flows may be measured (with proper attention to a change in prices) (Unit 8), and that we may use the notion of Constant or Real GNP to measure Economic Growth (Unit 9). We also know (Unit 9) that the size of the GNP may vary because of greater inputs, or from the increase in efficiency, or a combination of these. In Unit 11, we shall discover other relationships which may determine the size of the GNP. However, before we can follow that part of the analysis, we must, in this unit, examine the <u>composition</u> of the GNP, that is, its major components or breakdown.

II. Now let us see <u>how</u> the flow of goods and services and the flow of money may be subdivided into components. We will then be better able to appreciate <u>why</u> the sub-divisions are helpful.

A. You will recall that, in Unit 1, (IV C), goods and services were divided into consumer goods and services and producer goods and services. We also indicated that this two-fold division could be related to a four-fold division, representing the four buyers of the goods and services. We are now extending this analysis into the area of flows.

B. A two-fold division of the flow of goods and services and of money would be:



1. Note, the flow of goods and services has been broken down into those goods and services intended for producers, that is, producer goods and services (sometimes called capital). This sub-flow consists of tools, equipment, plant, inventories and the services of those who help produce such goods. In round numbers, in our economy, producer goods and services amount to about 15% of the total GNP.

2. The larger of the two sub-flows is the sub-flow of goods and services intended for consumers. It accounts for about 85% of the total output.

3. We must now ask how the flow of money may be sub-divided. But, first, let us recall, from Unit 7, that the flow of money represents the payments made to the factors of production, so the total flow of money is equal to the total value of the GNP. Now, we want to know how the income-receivers use the money they get.

4. The income received over a period of time may be either spent or saved. But economists use these words in a special and specific way. When current income is used to buy consumers goods and services, it is called spending (see chart above).

5. What of the money received which is not spent for consumers goods? What is not spent is called savings.

6. Now when the amount saved is used to buy producer goods and services, the economists call those purchases investing.

   a. The word "investing" is being used in the specific sense of buying producer goods and services. The word "investing" is also used in a different sense to mean buying a stock or bond. The important difference in the use here is that the word "investing" implies income received and not spent for consumer goods and services but used to buy producer goods and services.

   b. In Unit 11, we will be able to appreciate why these specific definitions for saving and spending are useful in determining the size of the GNP.

   c. At this point, the important idea is that the flow of money can also be sub-divided into two sub-flows--spending (for consumer goods and services) and investing (in producer goods and services).

7. In this unit, we have assumed that the amount of money spent equals the value of the consumer goods and services and the amount of money saved and invested equals the value of producer goods and services. Usually, they are not equal. We will see, in Unit 11, the problems which arise when they are not equal.

C. Let us examine the four-fold division of the flows (GNP). As noted in Unit 1, (IV C), the flow of goods and services may be divided into goods and services intended for consumers, business, government, and foreigners.

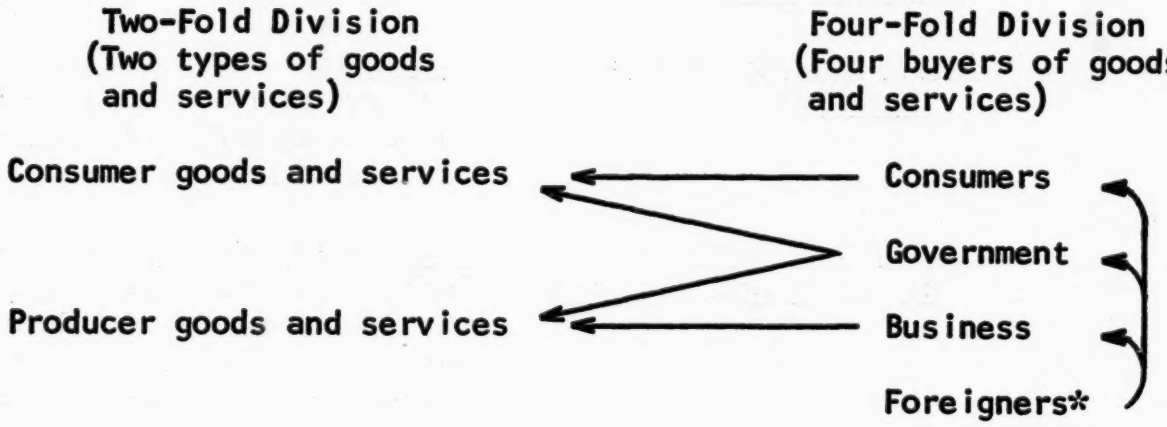
1. We have chosen the four labels: consumers, business, government, and foreigners for our breakdown of the GNP because these terms are more familiar to students. The National Income Accounts published by the Department of Commerce, however, use the following labels: households, producing, government, and rest of the world. In the National Income Accounts the GNP is computed as an addition of personal consumption expenditures, gross domestic investment, government purchases and net exports. The relationship between these four items and the four labels we have chosen is illustrated below:

Personal Consumption Expenditures	Consumers
Gross Private Domestic Investment	Business, includes also new construction of houses and those inventories directly intended for consumers.
Government Purchases of Goods and Services	Government here means collective purchase of goods and services by federal, state, and local governments. Major purchases, e.g. defense, highways, are difficult to define as collective purchase of goods and services for consumers.
Net Exports of Goods and Services	Foreigners buy as consumers, business, and government but are separately listed to show the Net Export of Goods and Services. This notion is rather difficult to explain at this point. It requires the background provided in Unit 14, but, in general, one wants to know the excess of exports of goods and services over imports of goods and services, that is, the net to be included in the nation's output.

2. The four-fold division is very helpful in analyzing the position of each of the four sectors in determining the size of the GNP. For example, one may look at the income and expenditure of each of the sectors and see how the surpluses of one sector will serve as an offset to the deficit of another sector. See, for example, in the Economic Report of the President, the table entitled, Gross National Product: Receipts and Expenditures by Major Economic Groups.

3. The four-fold division is helpful also because one may analyze the economy in terms of the various factors which can influence the ability and willingness of each sector to buy. Policies may be related to such analysis, e.g. a tax cut as a stimulant to consumer purchases.

4. The four-fold division, as we have already indicated in Unit 1 (IV C) may be related to the two-fold division. The chart is reproduced here as a summary of these relations.



A more complete appreciation of the relation to each other of the two-fold and four-fold division of flows will be possible when we have completed Unit II.

III. There are other useful groupings of the items in the nation's income (GNP).

A. One that is quite often quoted in the newspapers and is most useful in economic and market analysis is Personal Income.

1. Personal income is the income received by individuals, single proprietors and partnerships and such nonprofit institutions as pension and welfare funds.

2. The items included in Personal Income are:

a. Wage and salary disbursements

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*Foreigners, of course, act as consumers, businesses, and governments.

b. Other labor income (e.g. employer contributions to private pension funds)

c. Proprietor's income

d. Rental income

e. Dividends

f. Interest

g. Transfer payments (e.g. social security benefits, relief)

3. One would subtract the contributions of individuals to social insurance.

4. Personal income data is also broken down by states.

B. Disposable Personal Income is the personal income less taxes on individuals.

C. Just as the GNP may be adjusted for price changes, one may also do so for Personal Income and Disposable Personal Income; adjusted for prices, the Disposable Personal Income, may then be divided by the population to arrive at per capita incomes. See the Economic Report of the President.

D. Government Receipts and Expenditures is another category in the national income accounts. We have already indicated in the discussion of the four-fold division that each sector's receipts and expenditures can be found in tables in the Economic Report. Since government's receipts and expenditures, as a basis for fiscal policy (Unit 11), are so important, it is necessary to have data on this sector.

E. Finally, as we shall explain more fully in Unit 11, spending (consumption) and saving (investment) are so important in determining the size of the GNP, it is essential to have data on the sources and uses of savings. Such data can also be found in the Economic Report.

IV. The accompanying chart, entitled, "The Flow of Income," is intended to show how the sub-divisions of the flow of income are related to each other. The chart is intended only for the teacher as a resource for his orientation. A few comments on the chart will be helpful.

A. The data are drawn from the Economic Report of the President. Of course, these figures will change, but the chart can still be used as a guide and new data can be obtained from subsequent reports.

B. The chart is a simplification. Certain refinements in the analysis have been eliminated and a few modifications have been made but these do not distort the magnitudes or misrepresent the basic relations.

C. Explanation of the chart:

1. The GNP = National Income (payments to factors of production)

+Capital Consumption Allowances (Depreciation)
+Indirect Taxes

2. Personal Income (already explained in III A, B, C above). Note the backward flow from government to persons in Government Interest and Transfer Payments.

3. Personal Income

Less Personal Taxes
Equals Disposable Personal Income

Less Personal Savings
Equals Personal Consumption Expenditures

4. Government (all levels) expenditures equals government revenue plus deficit. Deficit made up from Savings (lower left box). See comment on Government Receipts and Expenditures in III D above.

5. Savings and Investment (commented on in III E above; to be treated more fully in Unit II). Note the sources and the uses of savings.

V. Relation to other disciplines (illustrations)

A. Geography: The data is a summary for the nation and hence provides a dimension to the geographical unit called the nation. In other words, the sectors in the GNP can be thought of as statistical "States," e.g. Personal Consumption Expenditures. Finally, some of the national data can be broken down into geographical areas, e.g. Personal Income by States.

B. Sociology: The analysis of the Gross National Produce does provide insights into the way society uses its resources and thus is an element in the sociology of work.

C. Political Science: The definitions of these sub-divisions of GNP indicate so well how important it is to be clear about terms, e.g. the distinction between Government Purchases of Goods and Services and Government Expenditures.

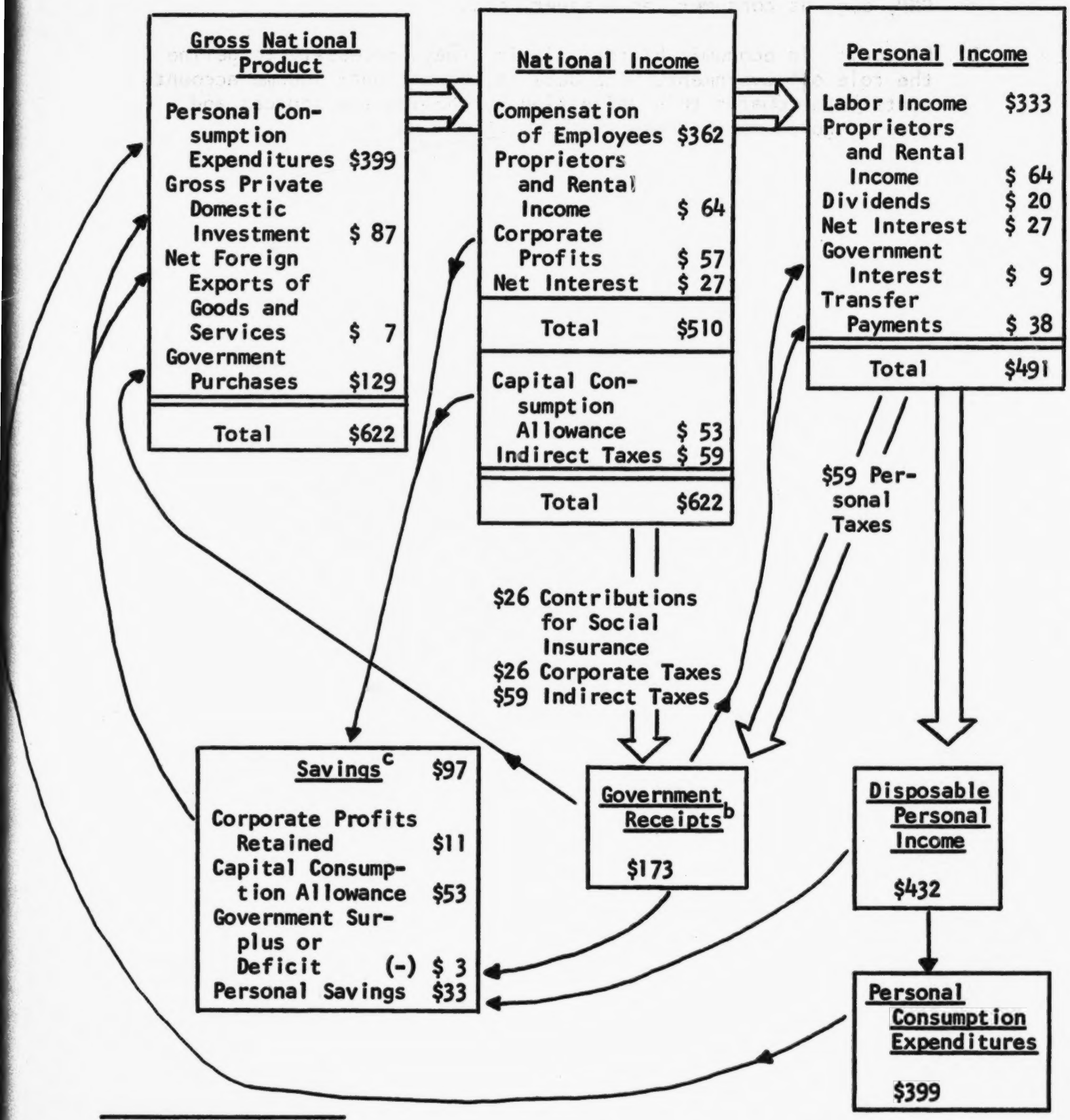
D. Psychology: The breakdown of the GNP into sub-divisions should help an individual see that in his thoughts and actions he plays many roles. He may be helped to identify these roles by placing himself in thought and action in the various sub-divisions of the GNP, e.g. as consumer, as a saver, etc.

E. History: In economic history, it is always necessary to define the role of government. The data in the national income accounts contribute towards this definition by showing the sources and uses of government income.

THE FLOW OF INCOME

GROSS NATIONAL PRODUCT DATA ADAPTED AND SIMPLIFIED FROM THE ECONOMIC REPORT OF THE PRESIDENT, 1965[a]

(1964 data, in billions)



[a]Data presented in round numbers; simplification required changes but did not significantly distort the magnitudes.

[b]Government expenditures equals government revenue plus deficit.

[c]Savings equal investment (after deduction to finance government deficit).

THE FLOW OF GOODS AND SERVICES AND THE FLOW OF MONEY

Unit 10: Composition of the GNP

Part II: Outline of Teaching Suggestions

I. Comments on the Content

A. Problems in teaching the concept

1. In Unit 7, introducing the concept of flows, it was emphasized that the student might have difficulty thinking in aggregates or totals, e.g. the GNP itself. Now in this unit, we are examining the sub-divisions of the flows, so now we are asking the student to think about the composition or components of the total flows. Of course, both notions are needed--the aggregate and the sub-divisions.

2. Moreover, these sub-divisions are themselves aggregates or, if you will, sub-aggregates. For example, the flow of consumer goods and services is a component of the GNP, but is itself an aggregate of the goods and services intended for consumers.

3. Although the GNP is a construction, visible to the imagination but not to the naked eye, so too the notion of sub-flows requires repetition until familiarity makes it concrete.

4. The division of the GNP into a two-fold or four-fold sub-flows may offer some difficulty because the significance of the divisions will not be more fully explained until they have studied the following unit.

B. The concept as part of the unfolding structure

1. Scarcity: The flow of goods and services may be thought of as aggregate supply and the flow of money as aggregate demand; likewise, the relation between the size of the consumer flow of goods and services and the amount of money available to buy them is also a supply and demand relationship, in this case recalling the notion of relative scarcity.

2. Flows: The notion of the composition of the flows is a logical unfolding, for we are examining the relation of sub-flows to total flows and the relation of the sub-flows of goods and services to the sub-flows of money.

3. Coordination: The breakdown into two-fold and four-fold sub-flows makes it possible to examine more closely how the flows of goods and services may be coordinated with the flows of money.

4. Marginal analysis: The examination of the composition of the flows will create the background needed in the next unit when we will study the significance of marginal changes in the flows and sub-flows.

5. Institutional factors: Institutional factors influence both the income and expenditures of each of the four sectors of the GNP.

II. Comments on the Learning Process

A. Vocabulary: The word "composition", used in the sense of components, may be a new one; similarly, the use of the term "breakdown". Another problem in vocabulary is the double naming of the four sectors, e.g. consumers - personal consumption expenditures. This double naming is made more difficult when we discover that some goods meant for consumers, e.g. new houses, are included under Gross Private Domestic Investment (business). Finally, there is the vocabulary problem of using a familiar word in a special sense, e.g. investing.

B. Mathematical concepts and skills

1. Repeating a comment made in Unit 7, the flows notion is an <u>analogy</u> to a flow of liquids and also implies a knowledge of <u>rates</u>. The notion of rates implies a quantity and time, so that one may conclude that the purchases by government represent a certain quantity of goods and services bought in a year.

2. The division of a whole into parts for different analytical reasons is one that is often encountered in mathematics and in logic, e.g. the advantages of dividing a dollar into nickels for candy machines and dimes for soft drinks; the United States divided into states and regions.

C. Ability to generalize

1. It is not difficult to think of the two-fold division of the GNP into producer and consumer goods if one uses the analogy of a farmer deciding how much of his corn he should use for seed and how much he should consume.

2. The four-fold division has a built-in basis for generalization, for we were able to go from the consumer as a recognizable economic unit to personal consumption expenditures, a more abstract designation.

D. Background

1. The notion of the division of income is present in the common sense use of money--how much for food, etc.

2. In each of the categories, there are multiple sources of income and expenditures, but here again one may get a present from both sets of grandparents and there are many ways to spend.

III. Learning Situations

A. From Teacher to Teacher

In Unit 3 we discussed the basic economic decision of what to produce. At that point we divided the total output (we did not call it GNP in Unit 3) into a two-fold division. In a very elementary way we illustrated the amount of growth that resulted when a society chose to produce varying amounts of producer goods and services. Unit 3, however, put the student in the position of a super-planner who had complete control of all the factors of production. (Even in the most highly planned economies existing in our world today, no single person exercises such vast power.) This early unit did illustrate the fact that in order to increase the supply of goods and services a society has to use an increased amount of the factors of production for producer goods and services. Unit 9 refined this idea by demonstrating that growth could occur not only through increased inputs of the factors of production but also through a more efficient use of those factors. We have yet to explain how growth resulting from either of these sources is initiated in actual societies. The two-fold division does not provide us with an adequate basis for this explanation.

Unit 11 will carry forward the explanation of the process of stimulating economic growth. Before this is possible, however, we must construct a new division of the GNP that will lend itself to a more advanced analysis of growth. From a pedagogical viewpoint, the problem in Unit 10 is how to maintain student interest in this important preliminary material until the treatment of the question of economic growth can be resumed in Unit 11.

The first situation in this unit illustrates the breakdown of the GNP into four sectors: business; consumer, which includes the activities of all consumers living in a nation; government, which includes the activities of national, state, and local governments; and foreign, which includes the trading activities of a nation with the rest of the world. This four-fold division is presented in an accounting framework in order to illustrate the interaction of flows between the four sectors.

Even for a simple economy such as the imaginary island of Tiva, the accounting structure becomes complex. This structure, however, does allow for precise illustration of the relationships between the four sectors and sets the stage for the following four situations which treat each sector individually. We have chosen to tell the students what categories economists use in making this four-fold division rather than allocate the time required to

"discover" the categories. As each sector is investigated separately in the next four situations, the materials suggest a return to the discovery orientation. Since learning situations three, four, and five contain a repetition of a large part of the examination introduced in situation two, the teacher may want to shorten the time allocated to those situations.

The sixth learning situation uses an accounting framework to establish the precise definitions of spending, savings and investment. The relationships between saving and investing are central to a discussion of economic growth and the four-fold division is a necessary framework for seeing the relationships between savings and investment. This unit provides illustrations of the background material; thus, setting the stage for a continuation of the discussion of growth in Unit 11.

B. Sequenced Learning Situations

1. First Situation: The Four-fold Division (Student Materials, page 609)

   a. Previous units made use of a two-fold division of the GNP. The two-fold division describes the utilization of the GNP for consumer goods and services or for producer goods and services. It does not describe the process of change in the utilization. We need a new division in order to analyze the process of generating economic growth. Who does the generating? Unit 10 offers an analytical device for dealing with this question.

   b. We already know from Unit 7 that the total flow of goods and services is equal to the total flow of money. Now we ask, "Who produces the goods and services and who receives them?" The word "who" refers to groups of individuals within the society--groups that act as buyers and sellers of the goods and services. It is the analysis of the economic behavior of these groups that will eventually allow us to explain the process of economic growth. This situation will acquaint the students with the four groups--called sectors--which economists use in their analysis of economic growth.

      The teacher may begin this situation by presenting the students with the problem of categorizing the four major sectors of the economy. It is important that the students realize that as the economist uses the term "sector" they refer not to individual persons or occupations but to the varied economic roles played by individuals and institutions.

Tivan Economics

The simple economy of the island of Tiva provides us with an example of economic growth that allows us to analyze the process of growth in its most elementary form. The total output on Tiva rose from 480 Tivan dollars in 1958 to 800 Tivan dollars in 1962. The population also increased from 60 in 1958 to 80 in 1962. In spite of this tremendous growth, the prices that Tivans charged each other remained the same.

The Tivans were content with the increased prosperity, but a few were also interested in why they had become so prosperous. Among these few was a young man named Saka who developed a method of analyzing the process of growth on Tiva.

Saka saw that during the five years, the production of copra and other products derived from the island's abundant coconut trees had increased. He reasoned that the prosperity must in some way be related to this increase and set out to trace the changes in production from year to year. He asked Galta, the chief's brother who was in charge of the copra "industry," for any records that he might have of past production. Although Galta's records were not kept in an orderly fashion, Saka was able to arrange the information in them into two main categories: (1) the money paid out by Galta to his workers and (2) the money he received from those who purchased the coconut products. He listed this information under two headings--IN and OUT--referring to the money that flowed in and the money that flowed out of Galta's business.

Although Galta's copra industry was by far the most important source of inflows and outflows on Tiva it was not the only one. There were also a number of other parts of the economy which contributed to the total flows. Therefore, Saka also used the idea of money and goods and services flowing in and out of these other parts of the economy, which he called sectors.

He called the first part, which included the activities of Galta's business, the business sector. The flow of money and the flow of goods and services in and out of the families on the island he called the consumer sector. The two categories still did not account for all the flows on Tiva. It was necessary to add a government sector and a foreign sector in order to balance the records and complete the analysis.

The system that Saka developed made use of the simple idea that everything that flowed out of one sector of the economy had to flow into some other sector. He reasoned that if a producer paid out $480 in wages then that same $480 had to be income to some other sector. In order to record the movement of the $480, this amount had to be entered in the records twice: once as an outflow and once as an inflow. So that the other islanders could understand his system, he illustrated a single entry for them as:

	Business		Consumer	
	Out	In	Out	In
Wages	$480			$480

With this system a person would be able to read at a glance the flow of any item such as wages, consumer expenditures, or taxes. Also, by totaling the items in the business sector, one would be able to tell the total value of the output (GNP).

Saka set up the records for Tiva in 1958 and 1962 as follows:

Table I: Gross National Product for Tiva

1958

Flows for:	Business Out	Business In	Consumer Out	Consumer In	Government Out	Government In	Foreign Out	Foreign In
Wages	$470			$470				
Business Taxes	10					$10		
Personal Consumption		$450	$450					
Personal Taxes			20			20		
Government Purchases		30			$30			
Exports		25					$25	
Imports		-25*						$25
Totals	$480	$480	$470	$470	$30	$30	$25	$25

Note: *Imports are entered as a minus figure under the In column for the producing sector.

Table II: Gross National Product for Tiva

1962

Flows for:	Business Out	Business In	Consumer Out	Consumer In	Government Out	Government In	Foreign Out	Foreign In
Wages	$770			$770				
Business Taxes	30					$30		
Personal Consumption		$710	$710					
Personal Taxes			60			60		
Government Purchases		90			$90			
Exports		40					$40	
Imports		-40						$40
Totals	$800	$800	$770	$770	$90	$90	$40	$40

Table II appears as a blank in the Student Materials (page 611). It may be beneficial to reproduce Table II on the chalkboard making the two entries for each item, one at a time. Students may be given the basic figures and be asked to place them in the appropriate sector and column spaces of Table II. This would allow an opportunity to emphasize the idea of the flows from one sector to the other.

Questions to Focus Discussion:

(1) On the basis of the figures stated in the first paragraph of the story, what is the amount of economic growth on Tiva from 1958 to 1962? (This question is a review of the concept of growth described in Unit 8, i.e. per capita GNP.) The figures given in the tables above show a very large amount of growth for a four-year period. In industrially advanced countries such as the United States, West Germany, Czechoslovakia, and the Soviet Union a growth rate of 5% per year is considered as good.

(2) What reason could you give for adding government purchases to the inflow column of the business sector?

(3) What reasons could you give for the way Saka entered exports and imports in the business and the foreign sector?

2. Second Situation: Consumer Sector (Student Materials, page 611)

a. In the first learning situation, the idea of a four-fold division of buyers and sellers was presented. The second learning situation is concerned with one of the four sectors, the consumer, in terms of inflows and outflows of money. (NOTE: Situations 2, 3, 4, and 5 all assume that the inflows to one sector are equal or are made equal with the outflows from that sector. Furthermore, an outflow from one sector must become an inflow to another sector. Because these relationships exist in all the sectors, a thorough examination of one may be all that is necessary. The examination of situations 3, 4, and 5 probably should proceed at a rapid pace.)

b. By examining the income of some selected individuals in the imaginary town of Elmville it is possible to account for the principal inflows of money in the consumer sector of an economy. The outflows are also illustrated. As an exercise for the students, the tables which appear at the end of this learning situation will be left blank in the Student Materials. Discussion of the sketches and completion of Tables IV, V, and VI will emphasize the idea that income for individuals is an outflow when put to use.

Economic Sketches of Five Elmville Citizens

The pharmacy in Elmville is owned and operated by Mr. Taylor who is able to make about $7,000 per year as the proprietor of his store. He also receives income from interest on $3,000 of municipal bonds which he has accumulated over the years. This interest amounts to $105 per year since these bonds pay a rate of 3 1/2% interest. Of his total income of $7,105

he spends $5,200 on personal consumption (living expenses), $1,050 is paid out in income taxes and $216 in social security payments. The rest of his income is put in a savings account.

Mrs. Crabtree, a widow, lives in the Crabtree family home on the main street of Elmville. The old house is large enough for her to rent rooms during the tourist season since she is alone in the house. Normally her income from renting out rooms amounts to $2,000 each year. She also receives a survivor's pension from the railroad company for which her husband had worked before he was killed in a train derailment. The railroad company pays her $150 a month or $1,800 per year, so her total year's income is $3,800. Her income taxes are $250, and her total expenses for a year are $3,290 allowing savings of $260.

George McCoy is employed in a local ready-mix concrete plant where he is a truck driver. Since the work tends to be seasonal, he is unemployed for four months during the winter months and draws unemployment compensation. His wages amount to $5,200 from the concrete plant, and his total unemployment benefits are $630 a year, for a total income of $5,830 per year. He pays income tax and social security only on the wages he receives in amounts of $530 and $216 respectively. Personal consumption for the McCoys amounts to $5,084 a year.

Mr. Hatfield manages the concrete plant where George McCoy works. He receives a salary of $12,000 and owns stock in the company which pays dividends of $500 per year to Mr. Hatfield. His income tax is $1,650 and social security payments amount to $216 per year. Since he has a mortgage on his new house and a son in college, his personal expenses are higher than the other people's. He spends $8,000 per year for personal consumption and the rest of his income is saved through his life insurance programs and savings account.

The owners of the concrete plant made a major expansion of their plant when a new super highway was built around Elmville. Money for this expansion was borrowed from Mr. Evans, a wealthy financier who retired in Elmville following his wife's death. He had loaned the concrete firm $200,000 at 3% interest, so his income amounted to $6,000. His income tax on this amount of income is $750. His personal consumption expenses are $4,400. The rest of his income goes into savings.

The following tables illustrate the inflows and outflows of money in more graphic form:

Table III: Total Personal Income

Entry:	Taylor	Crabtree	McCoy	Hatfield	Evans	Totals
Wages & Salaries			$5,200	$12,000		$17,200
Proprietors & Rental Incomes	$7,000	$2,000				9,000
Dividends				500		500
Transfer Payments		1,800	630			2,430
Net Interest (or Private Loans)					$6,000	6,000
Government Interest (Bonds)	105					105
Total Personal Income	$7,105	$3,800	$5,830	$12,500	$6,000	$35,235

Table IV: Disposable Personal Income

Entry:	Taylor	Crabtree	McCoy	Hatfield	Evans	Totals
Total Personal Income (Gross)	$7,105	$3,800	$5,830	$12,500	$6,000	$35,235
Minus Income Taxes	1,050	250	530	1,650	750	4,230
&						
Minus Social Security	216	0	216	216	0	648
Disposable Income (Net)	$5,839	$3,550	$5,084	$10,634	$5,250	$30,357

Table V: Personal Savings

Entry:	Taylor	Crabtree	McCoy	Hatfield	Evans	Totals
Disposable Income (Net)	$5,839	$3,550	$5,084	$10,634	$5,250	$30,357
Minus Personal Consumption Expenditures	5,200	3,290	5,084	8,000	4,400	25,974
Savings	$ 639	$ 260	———	$ 2,634	$ 850	$ 4,383

Table VI: Summary of Consumer Flows

Total Inflows		Total Outflows	
Wages & Salaries	$17,200	Income Taxes	$ 4,230
Proprietors & Rental Incomes	9,000	Social Security	648
Dividends	500	Personal Consumption Expenditures	25,974
Transfer Payments	2,430	Savings	4,383
Net Interest	6,000		
Government Interest	105		
Total Inflows	$35,235	Total Outflows	$35,235

NOTE: Tables IV, V, and VI are blank in the Student Materials.

3. Third Situation: The Business Sector (Student Materials, page 614)

   a. In the last situation we investigated the movement of money from the consumer's viewpoint. We noted certain inflows called "personal income" and certain outflows called "taxes and consumption expenditures" and whatever remained was labelled as "saving". This situation illustrates the inflows and outflows of money through the business sector of the economy.

   b. In the consumer sector previously studied, most of the analysis concentrated on the inflow of money to that sector. Since the inflow or revenue of the business sector can be treated as a single category, i.e. what the public, either as consumers, businesses, or government, spends to purchase its products, most of the analysis of this sector will deal with the ways in which the business sector uses its revenue.

Let us suppose that last year Strata Airlines received $1,500,000 from its passengers. This is the only inflow of money to this company. What does Strata Airlines do with this money? This is another way of asking what the different kinds of outflows for this company are.

Have the students construct an imaginary balance sheet for Strata Airlines. They will have to choose a set of labels for the different kinds of outflows and also supply imaginary entries. The following chart is the suggested format included in the Student Materials (page 614)

Table VII

Strata Airlines
Balance Sheet for 1964

Entry	Inflows	Entry	Outflows
1. Revenues from the Public	$1,500,000	1.	
		2.	
		3.	
		4.	
		5.	
		6.	
		7.	
Total Inflows	$1,500,000	Total Outflows	$

Question to Focus Discussion:

(1) Suppose that the figures chosen for the outflows totaled more than $1,500,000. How could Strata Airlines meet this deficit? How would this change the balance sheet?

c. The statistical information about these flows in a single industry will give us a picture of the movement of money as viewed by the businessman. The pattern of flows which we can discover in the case of the steel industry is in general the pattern for the whole business sector. The statistics given below have been abstracted from the Iron and Steel Institute booklet entitled Charting Steel's Progress in 1963.[1] Have the students compare the labels

[1] Charting Steel's Progress in 1963. New York: American Iron and Steel Institute, 1964, pp. 51-67.

which they choose for the outflow categories in Table VII with those given for the steel industry in this balance sheet.

The following balance sheet does not appear in the Student Materials. It is suggested that the teacher put it on the chalkboard after or during a discussion centering around the outflow categories chosen for Table VII.

Table VIII

U. S. Steel Industry's
Balance Sheet for 1963
(Amounts in millions of dollars)

Entry	Inflows	Entry	Outflows
Revenues from the Public	$14,612.7	Direct Employment Costs	$ 5,606.3
		Products and Services Bought	6,173.7
		Wear and Exhaustion of Equipment	996.4
		Taxes	927.3
		Interest	127.1
		Dividends	442.6
		Income Re-invested in Business	339.3
Total Inflows	$14,612.7	Total Outflows	$14,612.7

4. Fourth Situation: The Government Sector (Student Materials, page 614)

   a. In most societies, money flows in and out of the governmental institutions. In industrially advanced societies, total government purchases account for large portions of the GNP. (National, State, and Local Government purchases in the U. S. during 1964 accounted for approximately 20% of the GNP.)

   b. Some outflows of money from the consumer and business sectors are inflows for the government as we saw in the second and third learning situations. By the same token, some of the inflows to these sectors came from government, for example, the unemployment benefits of George McCoy. If we use the categories representing government inflows and outflows in the two previous situations and the actual figures for these categories for the U. S. in 1964, a balance sheet for the government sector may be constructed as follows:

Table IX

Balance Sheet: Government Sector
(1964 figures in billions, rounded off)

Entry	Inflows	Entry	Outflows
Personal Taxes	$ 59	Government Interest	$ 9
Social Security	29	Transfer Payments	38
Corporate Taxes	26		
Total Government Revenue	$114	Total Government Expenditures	$47

Questions to Focus Discussion:

(1) In all accounting balance sheets previously, inflows and outflows were equal. In Table IX a rather large discrepancy appears in the account; what reasons can be given for this?

(2) Think about the activities engaged in by governments to see if Table IX has either omitted some important factor or whether there has been a double counting error in the accounts.

Students may realize after some discussion that they failed to account for the government purchases of goods and services. A balance sheet may be made which shows this category (Table X).

Table X

Balance Sheet: Government Sector
(1964 figures in billions, rounded off)

Entry	Inflows	Entry	Outflows
Personal Taxes	$ 59	Government Purchases	$129
Social Security	29	Government Interest	9
Corporate Taxes	26	Transfer Payments	38
Total Government Revenue	$114	Total Government Expenditures	$176

The table still does not balance because indirect taxes have not been accounted for. The teacher will probably have to introduce this term since students are not likely

to group sales taxes, import duties, and excise taxes together under a heading of indirect taxes.

Table XI

Balance Sheet: Government Sector
(1964 figures in billions, rounded off)

Entry	Inflows	Entry	Outflows
Indirect Taxes	$ 59	Government Purchases	$129
Personal Taxes	59	Government Interest	9
Corporate Taxes	26	Transfer Payments	38
Social Security	29		
Total Government Revenue	$173	Total Government Expenditures	$176

Even with the addition of indirect taxes to the inflow side of the accounts, there is still a slight discrepancy in the totals. In order to bring the accounts into balance, another category is needed. This is called "government surplus or deficit." It is the savings category for the government sector. When revenues of the government (inflows) are greater than the government expenditures (outflows), there will be a surplus, i.e. savings. Conversely, when government expenditures exceed government revenues, the accounts must show a deficit, i.e. negative savings. Economists use the term "dissaving" to talk about negative or deficit saving. When the government surplus or deficit is entered, the table then balances as follows in Table XII.

Table XII

Final Balance Sheet: Government Sector
(1964 figures in billions, rounded off)

Entry	Inflows	Entry	Outflows
Indirect Taxes	$ 59	Government Purchases	$129
Personal Taxes	59	Government Interest	9
Corporate Taxes	26	Transfer Payments	38
Social Security	29	Government Surplus or Deficit	(-) 3
Total Government Revenue	$173	Total Government Expenditures	$173

5. Fifth Situation: The Foreign Sector (Student Materials, page 616)

   a. Up to this point, we have discussed the three sectors of the economy that account for the flow of money and the flow of goods and services within a nation. But most nations carry on trade with other nations which leads to flows of money and flows of goods and services between them. In order to account for all the flows, it is necessary then, to add a fourth sector to our analysis of the breakdown of the GNP--the foreign sector. Although this trade with other nations involves all three of the domestic sectors it is treated in the accounts as a separate sector. When a foreigner buys or sells products in this country he may transact his business with the consumer, the government, or the business sectors. On the other hand we may trade with a number of different countries. In the accounting, these international transactions are treated as if our country as a whole were trading with the rest of the world as a single unit. The new flow item is called "net foreign exports of goods and services." It is calculated by subtracting the value of total imports of goods and services from the value of total exports of goods and services. For example, total exports may be $12 billion and imports $8 billion. Thus, net foreign exports will be $4 billion. If the value of exports is exceeded by imports, the net foreign exports will be a minus figure. If total exports had been $8 billion and total imports had been $12 billion, then net foreign exports would have been (-) $4 billion.

      Exports are, in fact, domestic production sold abroad, and imports are purchases of foreign production. Therefore, the net of exports minus imports tells us how much foreign trade contributes to total domestic output. If it is a plus figure, then net exports of goods and services are added to total GNP; if it is a minus, it is subtracted from GNP.

   b. In order to understand the idea of net exports of goods and services as one of the components of the GNP, the following analogous situation can be examined by the students. The illustration of the definition of net foreign exports is placed in the setting of the Tivan economy.

Exports and Imports in Tiva

In the story of Tiva we noted a large increase in the production of copra from 1958 to 1962. At the same time exports from Tiva were also increased significantly. These exports were products of the Tivan economy paid for by money from outside Tiva. Suppose that as this production increased, Tivans found that they had to replace some of their equipment and also

had to buy better tools if they wanted to increase production further. However, they were so busy producing copra that they had no time nor raw materials to make these things. One foreign nation, with which Tiva traded, specialized in this kind of equipment, so Tivans decided to buy some tools from this country. This was not the first time Tiva had purchased goods from another country, but always before the value of the exports from Tiva equaled the value of the imports. Suppose in 1962 Tiva exported goods valued at $50 and they imported goods and services worth $45. When Saka sat down to draw up GNP for 1962, he came to the import-export category and wondered how to account for these transactions. The exports were produced on Tiva and should be considered as part of GNP. The imports were to be used in the economy of Tiva, but they were not produced by Tiva's economy.

Questions to Focus Discussion:

(1) In the example above, there was a transaction between two groups which involved products of unequal value and a need to account for the contribution of this trade to total production. How would you illustrate the $50 worth of exports and the $45 worth of imports in the accounts?

(2) Suppose that Tiva had imported goods of greater value than their exports. How would this be shown in the accounts? (Note to the teacher: The result would be a negative net export of goods and services paid for out of gross domestic savings. It is therefore a "dissavings".)

The discussion should lead to the definition of <u>net exports</u> by subtracting the value of imports of goods and services from the value of exports of goods and services. This same process is used to determine the net value of exports and imports in the foreign sector of the GNP. The result of subtracting such imports from exports in the foreign accounts is called the net exports of goods and services. It is expressed as a plus when exports exceed imports and a minus when imports exceed exports but it is always called net foreign <u>exports</u>--never net foreign imports.

6. Sixth Situation: Spending, Saving, and Investing (Student Materials, page 616)

a. The first learning situation in this unit introduced the four-fold division and the flows between the four sectors. In this introduction, each of the sectors used up exactly the amount of money it received, no more nor less. Therefore, none of the sectors engaged in savings. The subsequent learning situations, however, broke away from this unrealistic assumption. For example, in the consumer sector, we saw that consumers did not use all their disposable

income (income remaining after taxes) on consumption expenditures. After subtracting consumption expenditures from disposable income, the amount remaining was labeled personal savings. Here the economist uses the word "savings" in a special and specific way. The students will most likely think of savings as money put aside and not used. Economists, however, use the word "savings" to refer to income received that is not spent for consumer goods and services. Savings may be used to buy producer goods and services. In this case, economists refer to savings used to buy producer goods and services as investments.

b. Since the terms "spending", "saving", and "investing" are used in everyday conversation with one set of meanings and by economists with a different set of meanings, this learning situation is devoted to an exploration of the definition of these words. Knowledge of the precise definitions used by economists are essential for the concepts unfolded in Unit 11.

Anthropological journals frequently publish papers describing the economies of island societies. The illustrations used in this unit are drawn from such a source.[2] In this learning situation we have used dollars rather than the native currency because the native money in this case is a combination of cash and shells. We have also taken some liberties with the items entered into the accounts, combining some entries and omitting others in order to keep the number of entries to a minimum. (Some advanced students may wish to inspect the actual reports of island economies. These anthropological studies provide an interesting basis for integrating economic concepts with other social relationships.) We have eliminated the foreign sector in this situation for two reasons: first, because of the complexity involved in treating international flows, (We have reserved that discussion for Unit 14) and second, we can adequately explain the relationships between spending, saving, and investing without it.

The accounting structure used in this situation is a vehicle for graphically illustrating the definitions of spending, saving, and investing as these terms are used by economists. The arithmetic involved is simple addition and subtraction.

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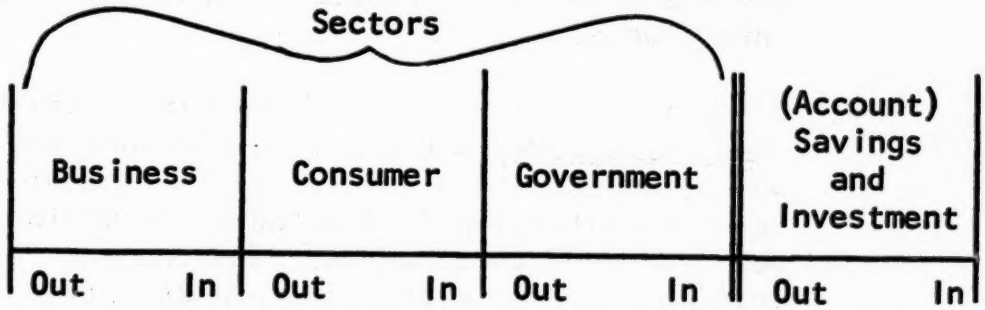
[2]A. L. Epstein, "The Economy of Matupit," Oceania. (Sydney, Australia: University of Sydney Press) Volume XXXIII, No. 3, March, 1963, pp. 182-215.

When we describe an economy in which the sectors are not spending exactly what they are receiving, we must add a new account in order to "balance the books." We will call this account Savings and Investment. Remember, we have temporarily dropped the foreign sector from our records. The accounting framework used in this situation will be:

National Product System



The savings and investment account is not a part in the four-fold division; but, as we shall see later, it is a good device for explaining the process of growth. Have the students read the following introduction to this situation in the Student Materials.

The prosperity that had come to Tiva since 1958 made it possible for some Tivans to have an income large enough to supply themselves with most of the important things they wanted and still have a little cash left over.

The fact that all the sectors were no longer spending exactly the amount of money they were receiving gave Saka a new problem to solve. He looked over the data for 1963 and attempted to set up a table to trace the flows for that year. This data and the table that Saka prepared are reproduced below:

Tiva
Data for 1963

1. Business paid out $850 in wages, $80 in rent, $150 in interest, and $130 in dividends to the consumer sector.

2. Businesses paid out $90 in taxes and consumers paid out $130 in personal taxes.

3. Government transferred $30 to consumers for social security benefits and unemployment compensation.

4. Consumers purchased $1,000 worth of goods and services from producers.

5. The government purchased $200 worth of goods and services from producers.

6. Businesses invested $300 in new capital goods.

Table XIII: Saka's First Attempt

Flows for:	Business Out	Business In	Consumer Out	Consumer In	Government Out	Government In
Payments to Factors of Production:						
Wages	$ 850			$ 850		
Rent	80			80		
Interest	150			150		
Dividends	130			130		
Business Taxes	90					$ 90
Personal Taxes			$ 130			130
Government Transfers				30	$ 30	
Personal Consumption Expenditures		$1,000	1,000			
Government Purchases		200			200	
Capital Goods		300				
Totals	$1,300	$1,500	$1,130	$1,240	$230	$220
Amount out of Balance	$200		$110		$-10	

Saka reasoned correctly that since Tiva exported exactly the same amount of goods that she imported and since Tivans had no other transactions with outsiders, he could eliminate the foreign sector as a source of his problem.

As he looked at the totals for the remaining sectors, it was evident that his accounts were not balanced. Business had received $1,500 and only used $1,300, leaving a difference of $200. Consumers had received $1,240 and only used $1,130, leaving a difference of $110. And the government had used $230 and only received $220, leaving a deficit of $10. Furthermore, businesses had produced $300 worth of capital goods (producer goods) for themselves. This had to be an inflow to the business sector because it represented goods that were produced and paid for. But who paid out the $300?

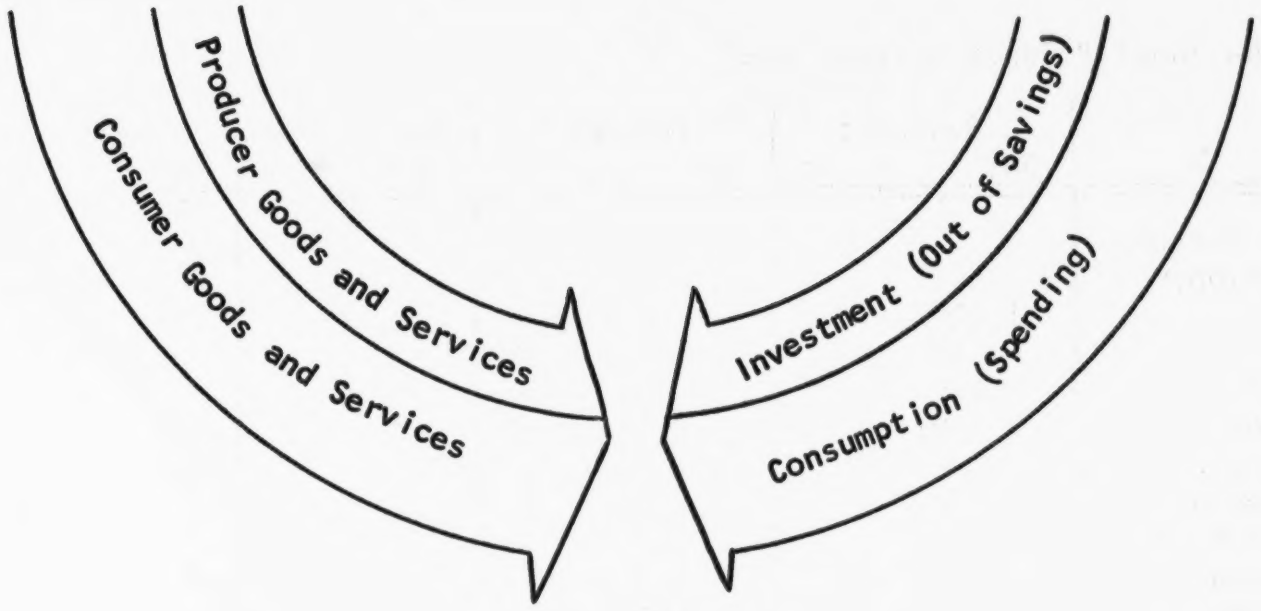
Saka added some new kinds of flows to his previous list and also a new account which he called Savings and Investment. Table XIV shows these additions and is partially filled in. Can you complete the table? We have entered the figures for business saving. The savings of each sector flow out of the sector and into the savings and investment account.

Table XIV: National Product System, Year 1963

Flows for:	Business Out	Business In	Consumer Out	Consumer In	Government Out	Government In	Savings & Investment Out	Savings & Investment In
Payments to Factors of Production:								
Wages	$ 850			$ 850				
Rent	80			80				
Interest	150			150				
Dividends	130			130				
Business Saving:								
Depreciation	(150)							$(150)
Retained Profits	(50)							(50)
Business Taxes	90					$ 90		
Personal Taxes			$ 130			130		
Government Transfers				30	$ 30			
Personal Consumption Expenditures		$1,000	1,000					
Government Purchases		200			200			
Domestic Investment:								
Capital Goods		300					$300	
Government Saving					(-10)			(-10)
Personal Saving			(110)					(110)
Totals	$1,500	$1,500	$1,240	$1,240	$220	$220	$300	$ 300

c. The teacher may find it necessary at this point to explain the flows in and out of the savings and investment account. We saw that in Saka's first attempt, businesses received $1,500 and used only $1,300 to pay for the factors of production and for taxes. Therefore, they had $200 left over. This amount left over is called business savings. It flows out of the business sector and into the savings and investment account. Consumers also had some money left over ($110) after spending $1,000 for consumer goods and services and $130 for taxes. This amount left over is called personal savings and flows out of the consumer sector into the savings and investment account. Whenever a sector spends more than it receives, we say that sector has <u>dissaved</u>. In this case, government dissaved $10 and this is recorded as $-10 flowing out of the government sector and $-10 flowing into the savings and investment account. (Dissaving is also called deficit spending.)

The savings and investment account is a convenient device for grouping together the total savings and the total investments of a society. We can now picture the relationship between savings and investment and the two-fold division.



d. The following exercise and the questions that follow may be used as a means of pulling together the relationship between spending, saving, and investing. The students are asked to enter the Tivan data for 1964 into Table XV and make responses to the questions on the basis of their entries.

Data for Tiva, 1964

1. Businesses paid out $1,020 in wages, $60 in rent, $160 in interest, and $130 in dividends to the consumer sector.

2. Businesses saved $170 for the depreciation of equipment and retained $60 of their profits toward the purchase of additional capital goods.

3. Businesses paid out $100 in taxes and consumers paid out $150 in personal taxes.

4. Government transferred $40 to consumers for social security benefits and unemployment compensation.

5. Consumers purchased $1,200 worth of goods and services from producers.

6. The government purchased $200 worth of goods and services from producers.

7. Businesses invested $300 in new capital goods.

Table XV: National Product System, 1964

Flows for:	Business Out	Business In	Consumer Out	Consumer In	Government Out	Government In	Savings & Investment Out	Savings & Investment In
Payments to Factors of Production:								
Wages	$1,020			$1,020				
Rent	60			60				
Interest	160			160				
Dividends	130			130				
Business Saving:								
Depreciation	170							$170
Retained Profits	60							60
Business Taxes	100					$100		
Personal Taxes			$ 150			150		
Government Transfers				40	$ 40			
Personal Consumption Expenditures		$1,200	1,200					
Government Purchases		200			200			
Domestic Investment:								
Capital Goods		300					$300	
Government Saving					10			10
Personal Saving			60					60
Totals	$1,700	$1,700	$1,410	$1,410	$250	$250	$300	$300

Note: The figures are omitted in the Student Materials.

Questions to Focus Discussion:

(1) How much money did Tivans <u>spend</u> for consumer goods and services in 1964?

(2) How much money did consumers <u>save</u>? Describe the process of determining this amount.

(3) How much money did Tivans invest in producer goods and services? What are the sources of the money for this investment in capital goods?

(4) Would it be correct to say that <u>spending</u> for consumer goods and services plus <u>investments</u> in producer goods and services are equal to the total value of the output (GNP)? Discuss.

THE FLOW OF GOODS AND SERVICES AND THE FLOW OF MONEY

Unit 11: Determining the Nation's Income

Part I: Sequenced Outline

I. We have learned that there are two flows (Unit 7), that the size of the flows can be measured (Unit 8) and used to calculate economic growth (Unit 9), and that one can examine the composition of the flows (Unit 10). Now, in this unit, we want to know <u>how changes</u> in the composition of the flows will determine the size of the output. If we know the effects of these changes, we will be able, by influencing these components, to determine the size of the GNP, that is, the <u>level of output</u>.

II. In Unit 10, and repeatedly before, it was stated that the GNP can be broken down into either <u>two</u> sub-flows or into <u>four</u> sub-flows. We will find it useful to begin with the two-fold division.

A. Let us assume that at a <u>given level of output</u>, say $100 billion, the following division of output occurred (remember, these are typical proportions):

		(Consumer Goods and Services) Consumption (Spending)		(Producer Goods and Services) Investment (Saving)
GNP	=		+	
$100 Billion	=	$85 Billion	+	$15 Billion

See Part I, II B of Unit 10 for flow diagram and comments.

B. A few explanatory comments need to be made:

1. We are assuming that $85 billion worth of consumer goods and services were produced and that the consumers spent that amount on them.

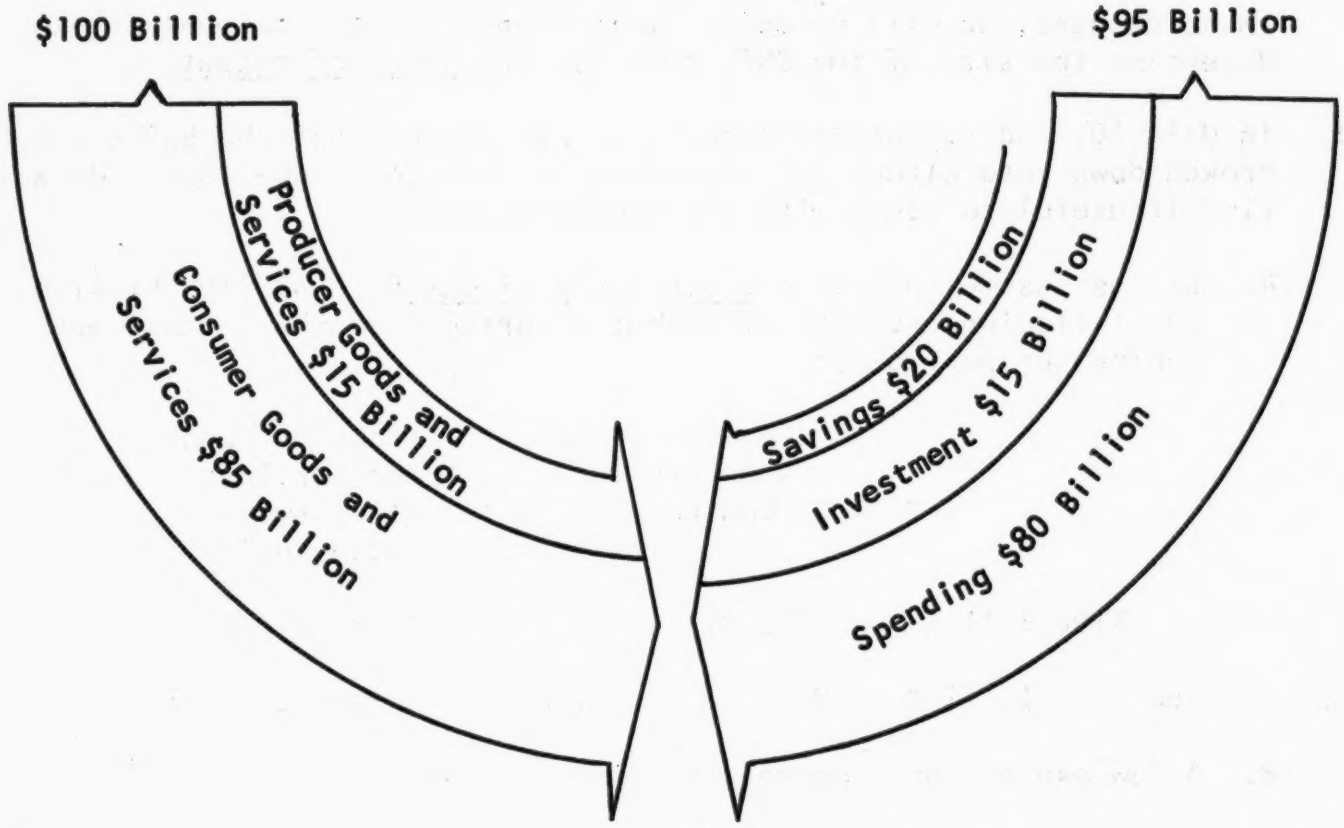
2. We are also assuming that <u>all income receivers</u> saved $15 billion which was used to buy, that is, <u>invest</u> in producer goods and services.

3. The significant fact for our present analysis is that <u>S=I</u>, <u>savings were equal to investment</u>.

4. Note also, in saying that $100 billion in GNP represents a certain level of output, we have <u>not</u> stated that the economy is operating at full employment. It is likely operating at less than full employment.

III. Now let us examine the case when <u>total expenditures</u> are <u>less</u> than the original <u>value of the output</u> and the <u>spending</u> and <u>investing</u> flows <u>do not perfectly match</u> the <u>sub-flows</u> of consumer and producer goods and services.

	(Consumer Goods and Services) Consumption (Spending)		(Producer Goods and Services) Investment (Saving)
$100 Billion	≠ $80 Billion	+	$15 Billion



A. Explanatory comments:

1. Either spending or saving (investment) could vary, but in this case, we have assumed the rate of investing is the same as in the previous example, but the rate of consumption is less.

2. The total of expenditures, $95 billion, is less than the original value of the product, and particularly, the rate of consumption is less than the original value of the consumer goods and services.

3. Savings of all income receivers are $20 billion while the rate of investment is $15 billion. That is to say, <u>S > I</u>, <u>savings are greater than investment</u>.

B. Results and possible economic policies

1. Results:

a. Since total expenditures are less than suppliers anticipated, there would be a cut back in production.

b. The GNP would be revalued downwards, say to $95 billion, but likely even more because of the effects of the multiplier, a concept to be discussed later in this unit.

2. Possible economic policies:

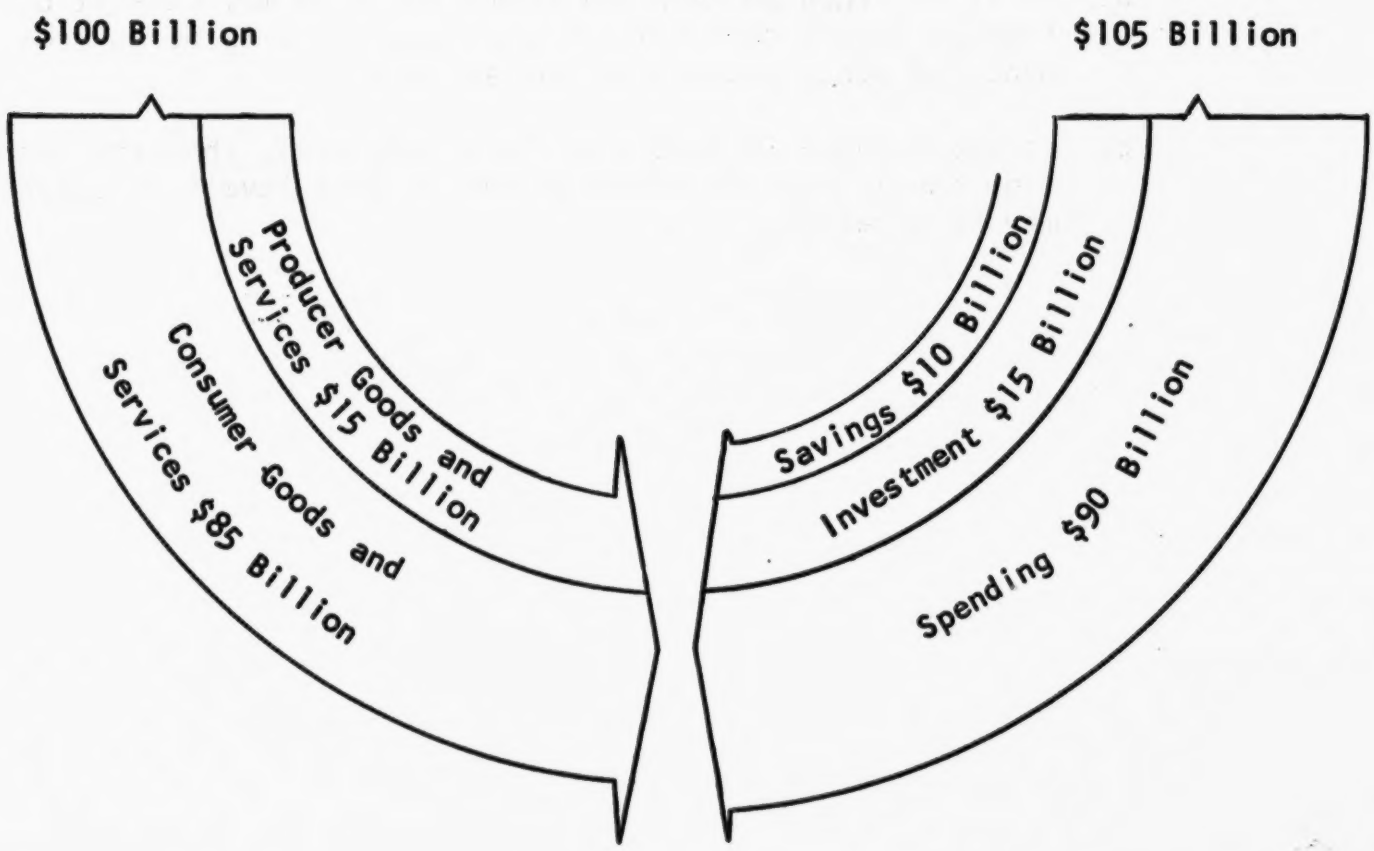
a. Consumers might be stimulated to spend more through easier credit terms and possibly lower prices.

b. If the interest rates fell because of the greater savings, business might be tempted to invest more, but this result seems less likely with the lower rate of consumption.

c. Government, not shown here in the two-fold breakdown, could increase its expenditures and make up for the decline in total expenditures.

IV. We may now examine the case when total expenditures are greater than the original value of the product and again the spending and investing flows do not perfectly match the sub-flows of consumer and producer goods and services.

GNP	=	Consumption (Spending)	+	Investment (Saving)
$100 Billion	≠	$90 Billion	+	$15 Billion



A. Explanatory comments:

1. We assume again that the rate of investment has not changed--it could have, of course--but only the rate of spending.

2. For the whole economy, <u>total expenditures</u> are greater than the current income, that is, the original value of the product. Since the rate of consumption is higher for the entire economy, the rate of saving is less than the rate of investment, that is, $S < I$.

3. The deficit in the saving from current income, namely, $5 billion, could come from past savings or from bank loans.

B. Results and possible economic policies

1. Results:

a. The results will depend upon the level of employment when the increased expenditures occur.

b. If the economy is fully employed, the greater expenditures will be inflationary, that is, cause a rise in prices.

c. If the economy is less than fully employed, the increased expenditures can cause an expansion of output, that is, a larger Constant or Real GNP.

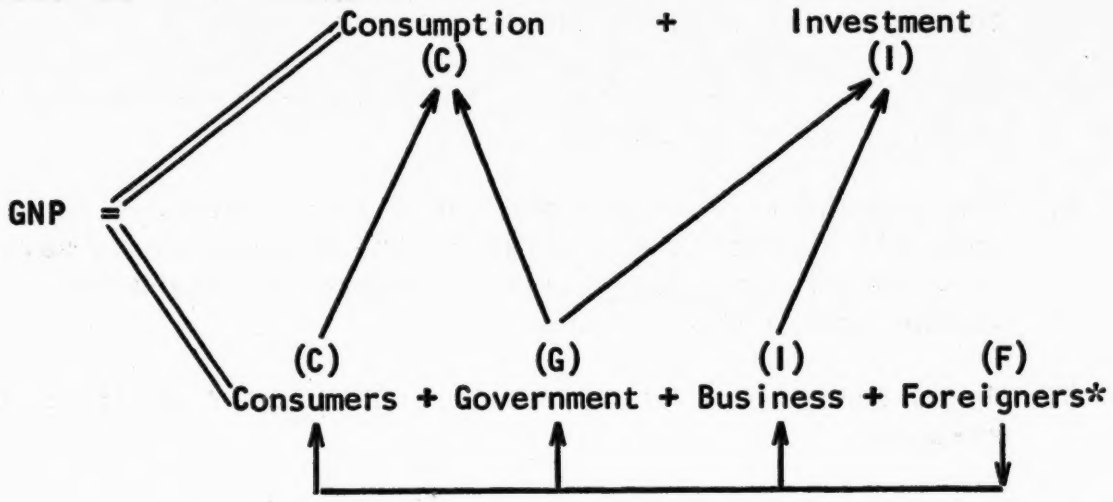
2. Possible economic policies:

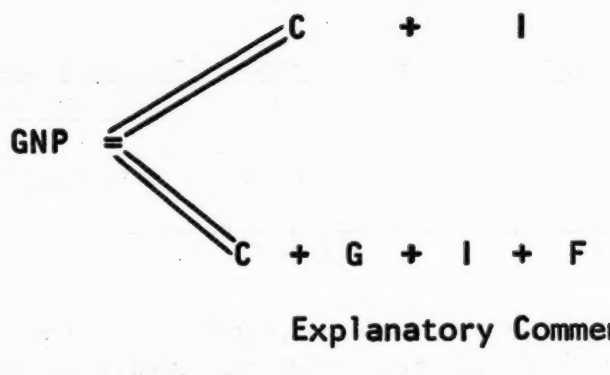
a. It will have to be determined whether the economy is fully employed.

b. If it is, then anti-inflationary policies may consist of tighter credit controls, reduced expenditures by government and other sectors of the society.

c. If the economy is less than fully employed, then the expansion should be left alone so that higher levels of output may be attained.

V. We have seen how the two-fold division of the flow of goods and services and the flow of money can provide a basis for determining the nation's income. We already know, from Unit 10, that a two-fold division can be expanded into a four-fold one. The following is merely a repetition, this time as an equation:





Explanatory Comments

A. The four-fold division provides a more detailed <u>sector</u> analysis. The two-fold division grouped the variables in the four-fold division, i.e. C + G into C.

B. Each of the four buyers can expend more than he receives or less than he receives (and thus save).

C. The analysis applied to consumption and investment may therefore be extended to include each of the four buyers.

D. Possible economic policies would therefore have to be applied to influence the receipts and expenditures of each of the sectors composing the GNP.

VI. We have now shown how each of the components of the GNP can influence the level of output. We have not yet discussed how <u>changes</u> in the rate of expenditures can have <u>more than a proportional change</u>, that is a

---

*Note direction of arrow.

multiplying effect, on the amount of consumption and hence on the GNP. This effect is called the multiplier.

A. The notion of the multiplier has four distinct elements:

1. Marginal--we are focusing on an addition to or subtraction from the income of each of the four buyers.

2. Propensity to spend (consume) or save--the percentage of income which is spent or saved.

3. The propensity to spend and the size of income--the larger a person's income, the greater is the propensity to save, that is a larger percentage will in general be saved out of a larger income than a smaller one.

4. Money turns over many times during the year as it is spent and re-spent.

B. A simple example of the injection of an additional expenditure by either consumers, business, government or foreigners:

Additional Expenditure	Amount of Additional Consumption (Propensity to consume = 2/3 for everyone*)				
$100	66.67	44.44	29.63	19.75	.....
$100			$200.00		

In other words, the original addition in expenditure, resulted in $200 of additional consumption, or the original addition was multiplied by 3.

For further comment on this formula and the mathematics involved, see Part II, Section II B, Mathematical concepts and skills.

C. The multiplier and possible economic policies

1. Since additional injections from one or more of the four buyers will have multiplying effects, the multiplier must be taken into account in economic policies.

2. The multiplying effect also works to multiply a reduction in expenditures on the part of each of the four buyers.

3. There are many more consequences of the factors influencing the level of output, but this unit offers only the barest

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*In this example, everyone is assumed to have the same propensity to spend, regardless of the size of income. It makes it easier to use a formula.

introduction. Because this part of economic analysis, namely, the determination of the nation's income, is so unfamiliar, the following sources may be consulted for further discussion:

a. Any college-level textbook.

b. Economic Report of the President (annual).

c. Heilbroner, Robert L. Understanding Macroeconomics. Englewood Cliffs, New Jersey: Prentice-Hall, 1965.

d. Soule, George H. Introduction to Economic Science. New York: Mentor Books, 1962.

e. Bator, Francis M. The Question of Government Spending: Public Needs and Private Wants. New York: Collier Books, 1962.

THE FLOW OF GOODS AND SERVICES AND THE FLOW OF MONEY

Unit 11: Determining the Nation's Income

Part II: Outline of Teaching Suggestions

I. Comment on the Content

A. Problems in teaching the concept

1. This unit, showing how changes in the composition of the flows, can determine the size of the flow, presents a situation that is both easy and difficult to handle. The easy part is that everyone knows that anything present in a situation can have an effect. The hard part is to be careful and clear about defining the variable and indicating how it does have its effect, e.g. changes in the rate of consumption.

2. The analysis may offer some difficulties because one begins with a two-fold division and then elaborates it into a four-fold division. Yet this notion has been introduced in the very first unit and repeated several times.

3. The use of two-fold, then a four-fold, division can be employed to show how different approaches to a problem may each be helpful. The two-fold division indicates a basic relation of consumption and investment (saving) and the four-fold division shows more detail and also parallels the data given in the national income accounts (Unit 10).

4. The notion of the multiplier should not prove difficult if one emphasizes what the multiplication means in this connection, i.e. turnover of a certain proportion of money.

5. The multiplier also indicates another element to be considered in the way changes in the composition of the GNP affect its size.

B. The concept as part of the unfolding structure

1. Scarcity: In Unit 10, it was pointed out that the flow of goods and services may be thought of as aggregate supply and the flow of money as aggregate demand. In showing in this unit that the dollar value of supply may not be matched by the dollar value of demand, we are demonstrating further, in terms of flows, how sub-aggregates of supply and demand may not match.

2. Flows: The analysis of the mis-match of sub-flows and its effects is an extension of the analysis of flows.

3. Coordination: The examination of the relation of components of the GNP and the effects on its size indicates what is involved in coordinating economic activity.

4. Marginal analysis: The multiplier is based on the marginal propensity to consume, that is, the proportion of an additional amount of income which will be spent.

5. Institutional factors: Institutional factors will influence each of the four buyers. Institutional factors are significant in the distribution of income. The propensity to spend will be affected since it is assumed to be higher in lower income brackets.

II. Comments on the Learning Process

A. Vocabulary

1. One possible difficulty in this unit is that investment, as the economist uses the word, may not be equal to saving, as the economist uses that word. What is implied is that the <u>amount</u> or <u>rate</u> of investment may not be equal to the <u>amount</u> or <u>rate</u> of saving.

2. Another vocabulary difficulty may be present in the way saving is related to consumption. If out of a current income, consumers save more than was anticipated, then we are saying that they spent less. Hence if saving is greater than investment, we are implying that <u>consumption</u> is less than was anticipated.

B. Mathematical concepts and skills

1. The notion of rates, e.g. rate of saving or investing, rate of consumption, indicates the proportion of income that is saved. The formula for this relationship would be:

$$\frac{\text{Spending}}{\text{Income}} = \text{Rate of Spending}$$

The <u>marginal</u> propensity to spend is the percentage spent out of an <u>additional</u> amount of income:

$$\frac{\text{Additional Amount Spent}}{\text{Additional Income}} = \text{Marginal Propensity to Spend}$$

2. The formula for the multiplier is the same as the sum of a geometric progression, that is, when a figure is repeatedly multiplied by a given amount. When the multiplication is infinite, the formula is:

$$S = \frac{1}{1-r}, \text{ where } r \text{ is the multiplier}$$

Applied to the multiplier in economics, we have:

$$\text{Total Addition to Income} = \frac{1}{\text{1-marginal propensity to spend}}$$

$$= \frac{1}{1-2/3} = \frac{1}{1/3} = 3$$

Conclusion: total addition to income is three times the initial addition.

C. Ability to generalize

1. The notion of matching sub-flows is basically the idea of matching. In the case of the flow of goods and services and the flow of money, one is asked first to recognize the possibility of mis-matching and then the consequences.

2. The multiplier does require an act of imagination to see its effects on total economy, but is not much of a "jump".

D. Background

1. In the student's personal experiences and that of his family there are endless examples of matching expenditure patterns with possible purchases. For example, does one buy as much ice cream on a cold day as on a warm one?

2. The marginal propensity to spend is present in the thinking of any child who has ever received an amount of money as a present.

III. Learning Situations

A. From Teacher to Teacher

In Unit 7 the flow of goods and services and the flow of money were defined. Gross National Product as a means of measuring the size of the flows was developed in Unit 8, and in Unit 9 growth of the economy in terms of GNP was examined. The GNP was analyzed in terms of four sectors of buyers and sellers in the past unit.

The situations of this unit will show how the various sectors of the economy, through their expenditures, cause the level of GNP to fluctuate. Hopefully the illustrations will lead to understanding the relationship between the concept of economic stability and the concept of economic growth.

The two-fold division of flows introduced in Unit 7 will be related to the four-fold division explained in Unit 10 in the first situation. The models used to illustrate this relationship show that the expenditures of the four sectors may be expressed in terms of

producer goods and services and consumer goods and services. The goal of this situation is to illustrate the composition of GNP in terms of the two-fold and the four-fold division.

Up to this point in the course we have assumed that the flow of money and the flow of goods and services were in perfect balance or equilibrium. The second situation develops the concept that such a balance is unrealistic. It is more realistic to assume that the demand for goods and services (the flow of money) and the supply of goods and services (flow of goods and services) are usually in disequilibrium. Two forms of disequilibrium may occur in the economy, one of inadequate demand, the other of inadequate supply. This situation illustrates these two forms of disequilibrium, using the familiar flows arrows.

In the third situation, the results of the two different forms of disequilibrium will be examined. If inadequate demand disequilibrium occurs, then we may expect the reactions of the sectors in the economy to lead toward a recession. The results of inadequate supply disequilibrium will differ depending upon the level of employment of the factors of production. If the factors are fully employed, then inadequate supply disequilibrium may lead to inflation. If they are not fully employed, i.e. there is some unused capacity in the economy, then this situation leads to a higher level of output.

In all the preceding units dealing with flows, the concept of money was used to talk about the flows. Demand for goods and services has been expressed as a flow of money and the flow of goods and services has been discussed in terms of its monetary value. In the next unit the definition and the role of money will be examined as it functions in the economy to influence growth and stability.

B. Sequenced Learning Situations

1. First Situation: Relating the Two-fold and Four-fold Divisions (Student Materials, page 619)

   a. In Unit 10 it was shown that the total GNP could be examined in terms of four sectors in the economy which act as buyers and sellers. The four sectors are: consumer, business, government, and foreign. Unit 11 is an examination of how each of these sectors may influence the GNP. In order to do this it will be necessary to consider the type of goods and services purchased by each sector. That is, how much of each sector's income is spent for producer goods and how much for consumer goods. In the first situation the kinds of purchases made by the sectors will be examined while the subsequent situations will deal with the manner in which these purchases will influence the total GNP. In the two-fold division of the GNP it was possible to analyze the composition in terms of the kinds of purchases made and the

use made of income. Goods and services were divided into producer and consumer goods and services on the basis of their functions. The money flow matching the flow of goods and services was divided into consumption expenditures and investment expenditures according to the kinds of purchases made. Investment expenditures buy producer goods and services and consumption expenditures buy consumer goods and services. The four-fold division examined the GNP according to the groups who purchased the products, but not in terms of the types of expenditures they made. This situation will illustrate the linkage between the two-fold division and the four-fold division.

b. A grid can be constructed which illustrates the relationship between the four-fold and two-fold divisions. The left side of the grid is marked off in producer and consumer goods to represent the two-fold division. The four sectors appear in the top of the grid. This grid should be placed on the chalkboard to be used in the following discussion.

Grid for Relating the Two-fold and Four-fold Divisions

Two-fold Division \ Four-fold Division	Consumer Sector	Business Sector	Government Sector	Foreign Sector
Types of Purchases Made by the Sectors: Consumer Goods & Services				
Types of Purchases Made by the Sectors: Producer Goods & Services				

Under separate headings students should list the kinds of purchases made by each of the sectors. When lists of purchases made by the four sectors are complete, then the items in the list can be examined to determine whether they are producer or consumer goods and services. The items should be coded using P for producer goods and services and C for consumer goods and services. When the coding of the items has been completed, then the grid may be marked.

Note: A telephone in a home would be considered as a consumer service while a telephone in a business office would be considered as a producer service. This is a refinement of the idea of the two-fold division as it was initially presented in Unit 3.

Questions to Focus Discussion:

(1) What specific kinds of things are purchased by each of the sectors?

(2) Examine the purchases to determine whether they are consumer goods or producer goods.

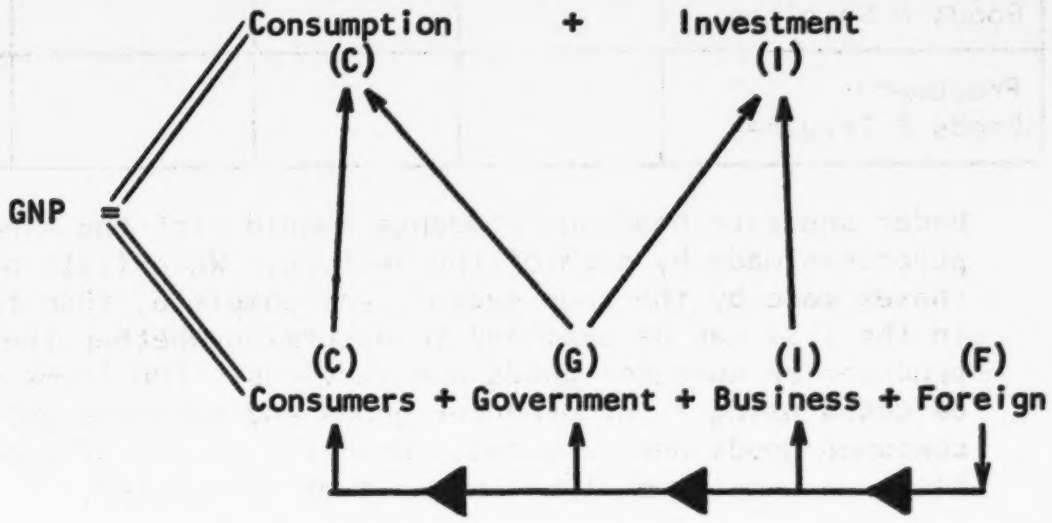
(3) What can be said, in a general way, about the kinds of purchases made by each of the sectors? Government purchases are both for consumer goods and producer goods; hence, this sector both spends and invests.

Grid for Relating the Two-fold and Four-fold Divisions

Two-fold Division \ Four-fold Division	Consumer Sector	Business Sector	Government Sector	Foreign Sector
Types of Purchases Made by the Sectors: Consumer Goods & Services	X		X	X
Producer Goods & Services		X	X	X

The grid may be marked off following the discussion as above, thereby showing graphically the linkage between the two different divisions we have used. This grid provides the foundation for moving to the following diagram:

Diagram I: Relating the Two-fold and Four-fold Divisions



The top line represents the two-fold division of GNP and the bottom line represents the four-fold division. The lines and arrows show that consumer purchases are entirely for consumer goods, government expenditures are for both consumption and investment, business expenditures are entirely for investment, and the purchases of the foreign

sector are for both consumption and investment. Using the letter symbols, the two-fold division may be expressed as:

$$GNP = C + I.$$

The four-fold division is shown as:

$$GNP = C + G + I + F.$$

Notice that the business sector is expressed as (I) in the formula rather than (B); this is done because business expenditures for plant and inventory are considered as investments.

2. Second Situation: Disequilibrium, an Imbalance Between Savings and Investment (Student Materials, page 619)

   a. Diagram I in the first learning situation summarized the relationship between the two-fold and the four-fold division. In each sector of the four-fold division money flowed in as income, receipts or revenue and money flowed out (as some kind of expenditure) to buy goods or services or to pay taxes. (Money ultimately flowed out of the government sector to buy goods and services.) The money that flowed into each sector (e.g. income) that was not used for expenditures was called savings. To balance the accounts in each sector, these savings were also considered as outflows from each sector and inflows in the savings and investment account. Savings constituted the inflows to this account and the outflows were called investments. In Unit 10 the accounts for Tiva showed that the total amount of money saved by all the sectors was exactly equal to the amount of money invested. Savings are always equal to investments in an accounting structure by definition. The Assumption made here is that the total savings of a society are invested in producer goods and services. Thus:

		(Consumer Goods and Services) Consumption (Spending)		(Producer Goods and Services) Investment (Saving)
GNP	=		+	
100 Billion	=	85 Billion	+	15 Billion

   b. Social accounting uses the assumption that savings = investment to make the accounts balance at the end of the year. The accounts give a picture of economic activities from January 1 to December 31 of a given year. By making savings = investment, the social accounts give a balanced picture of economic activities for a given year. The economist refers to this balance picture as a state of equilibrium.

Have the students read the short description of the hypothetical economy of Nowhere. This story describes an economy that remains in a perfect state of equilibrium. The questions that we have suggested as a focus for a discussion following the reading concentrate on the establishment of a definition of equilibrium and also on the establishment of the idea that real economies are usually in a state of disequilibrium.

A series of student activities are then used to engage the students in an exploration of the different forms that disequilibrium may take.

The Economy of Nowhere

Nowhere is a very unusual country. On January 1 of each year the citizens of Nowehre are told the exact amount of their income for the year. They then make out a list of all the goods and services they intend to buy during the coming year. This information is fed into a complex of computers called "the Regiment." Within a day, all the managers of the various businesses that produce these goods and services receive a data sheet telling them how much of their product will be purchased during the year. This data sheet is entitled, "Consumer Demand." The government's Bureau of the Budget prepares a statement of its intended purchases. This purchase order known as "Government Demand" is also sent on January 2 to the business managers.

Since there is no competition for customers in Nowhere, the businessmen divide the consumer demand proportionally among themselves. The businessmen then decide the amount of money they will need for investments in producer goods. This information is fed into a giant computer called "the investotron," which summarizes the total investment needs of Nowhere. This total is called "Producer Demand."

Consumer demand plus government demand plus producer demand gives the economists a figure which they call "<u>total demand</u>." In Nowhere, the total value of the output always is exactly equal to the total demand, the government always spends exactly what it receives in taxes, and the amount of total savings is always exactly equal to the amount of total investment.

Nowhere is in a state of equilibrium. Year in and year out this state of equilibrium is preserved. Nowhere trades with nobody because trade might upset the balance. The nation anthem of Nowhere is "Don't Make Waves" and the motto is "Don't Rock the Boat."

Questions to Focus Discussion:

(1) An economy is in a state of equilibrium when the flow of goods and services is balanced by an equal flow of money. This is a very simple definition of equilibrium. This simplified definition, however, does not tell us what conditions must exist in an economy to bring about this perfect balance. Using the story as

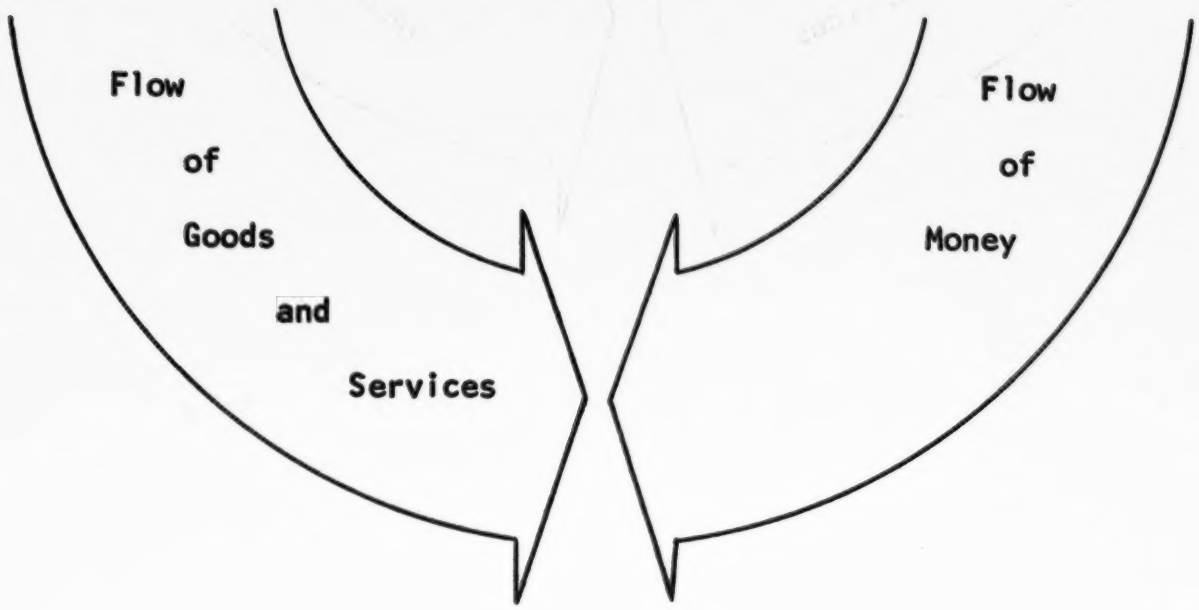
a guide, develop an expanded definition of equilibrium that includes the following:

Total value of the output
Total demand
Savings
Investment

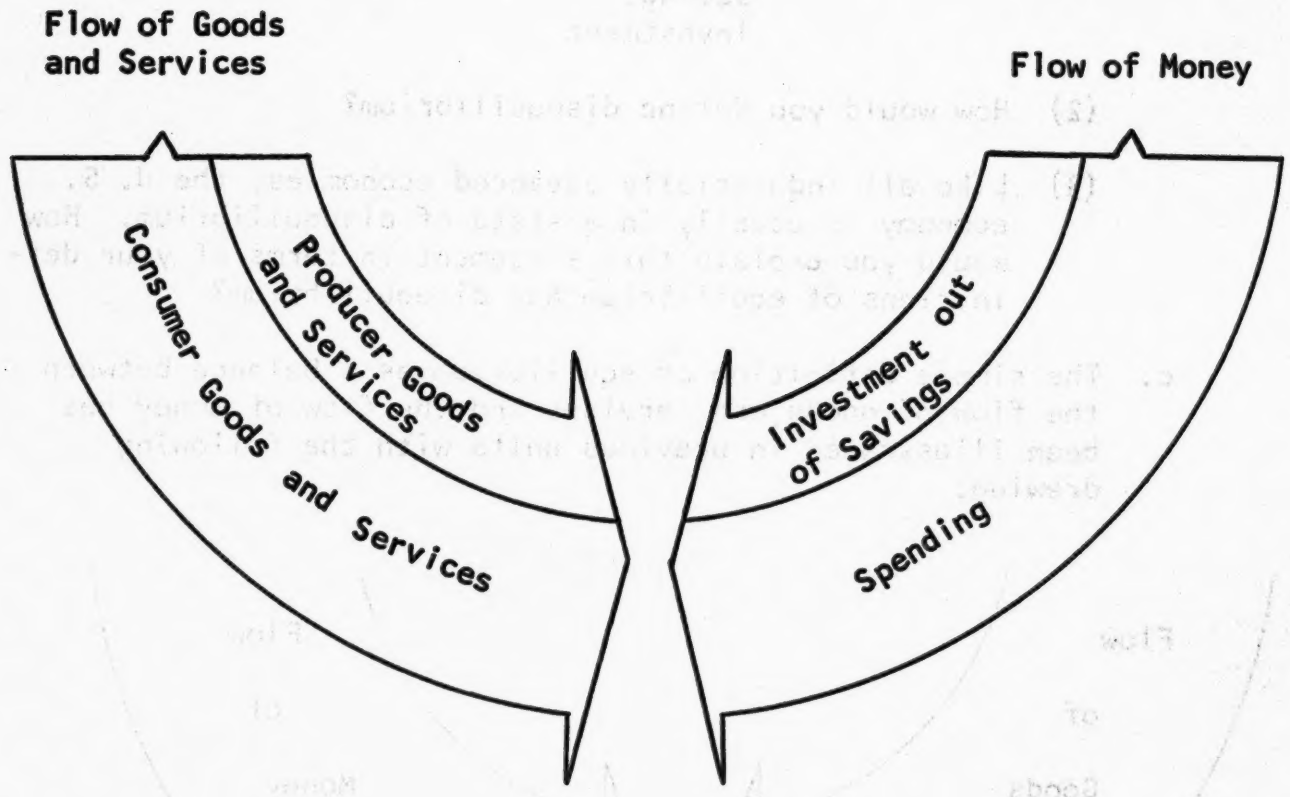
(2) How would you define disequilibrium?

(3) Like all industrially advanced economies, the U. S. economy is usually in a state of disequilibrium. How would you explain this statement in terms of your definitions of equilibrium and disequilibrium?

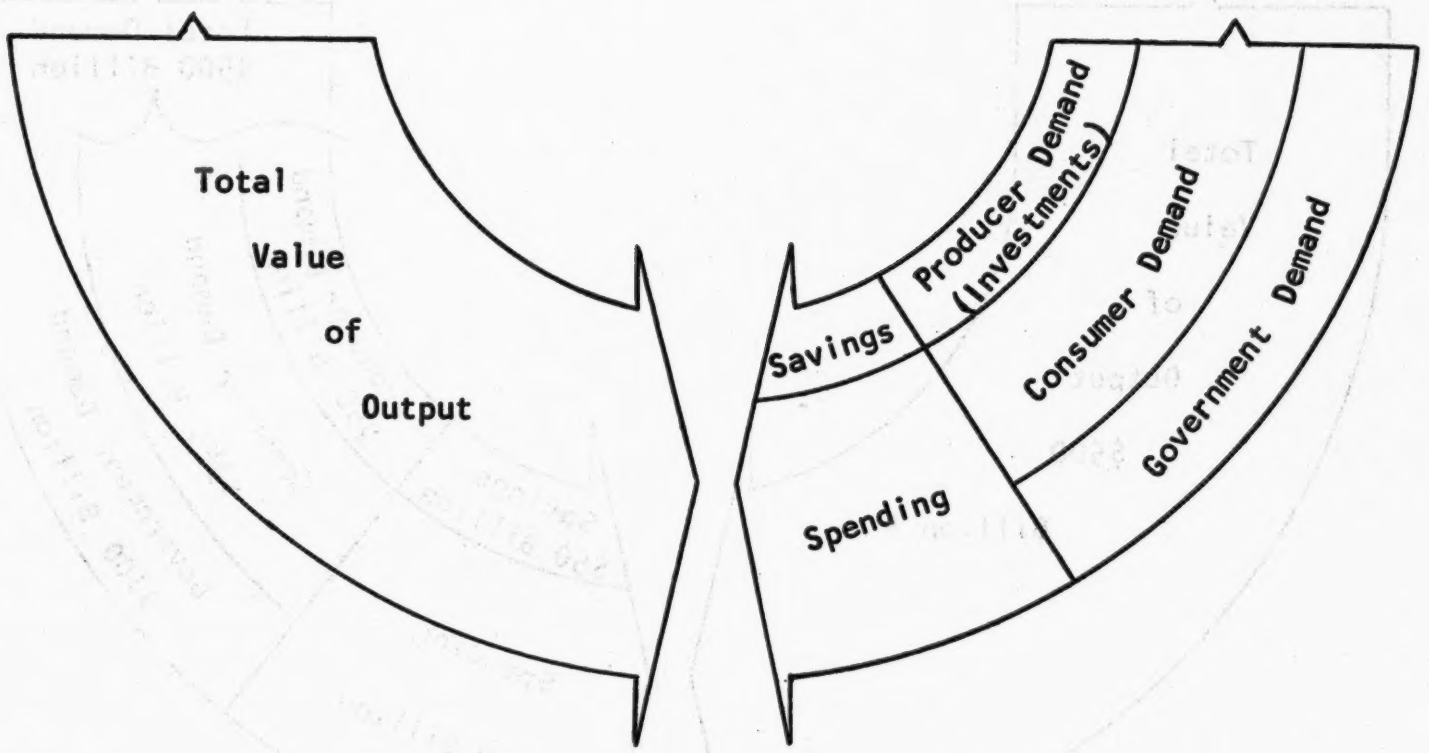
c. The simple definition of equilibrium as a balance between the flow of goods and services and the flow of money has been illustrated in previous units with the following drawing:



In Unit 10, the flow of money arrow was illustrated in such a way that it showed a division into spending and saving. By assuming that the whole amount of money saved by the society was invested in producer goods, the drawing showed equilibrium in the following manner:



In this learning situation, we will create a more detailed picture of the flow of money. The spending and saving of the society will now be related to the demands of the three domestic sectors for goods and services. The expanded definition of equilibrium is pictured as follows:



Let us suppose that last year the economy of the U. S. showed a state of equilibrium. By this we mean that:

(1) Producers correctly anticipated the demands of consumers and government.

(2) Producers also correctly anticipated the amount of producer goods and services needed.

(3) The total savings of the society were used to finance the investments in producer goods and services.

We will further suppose that the amounts of money involved were:

(1) Total value of output - $500 Billion

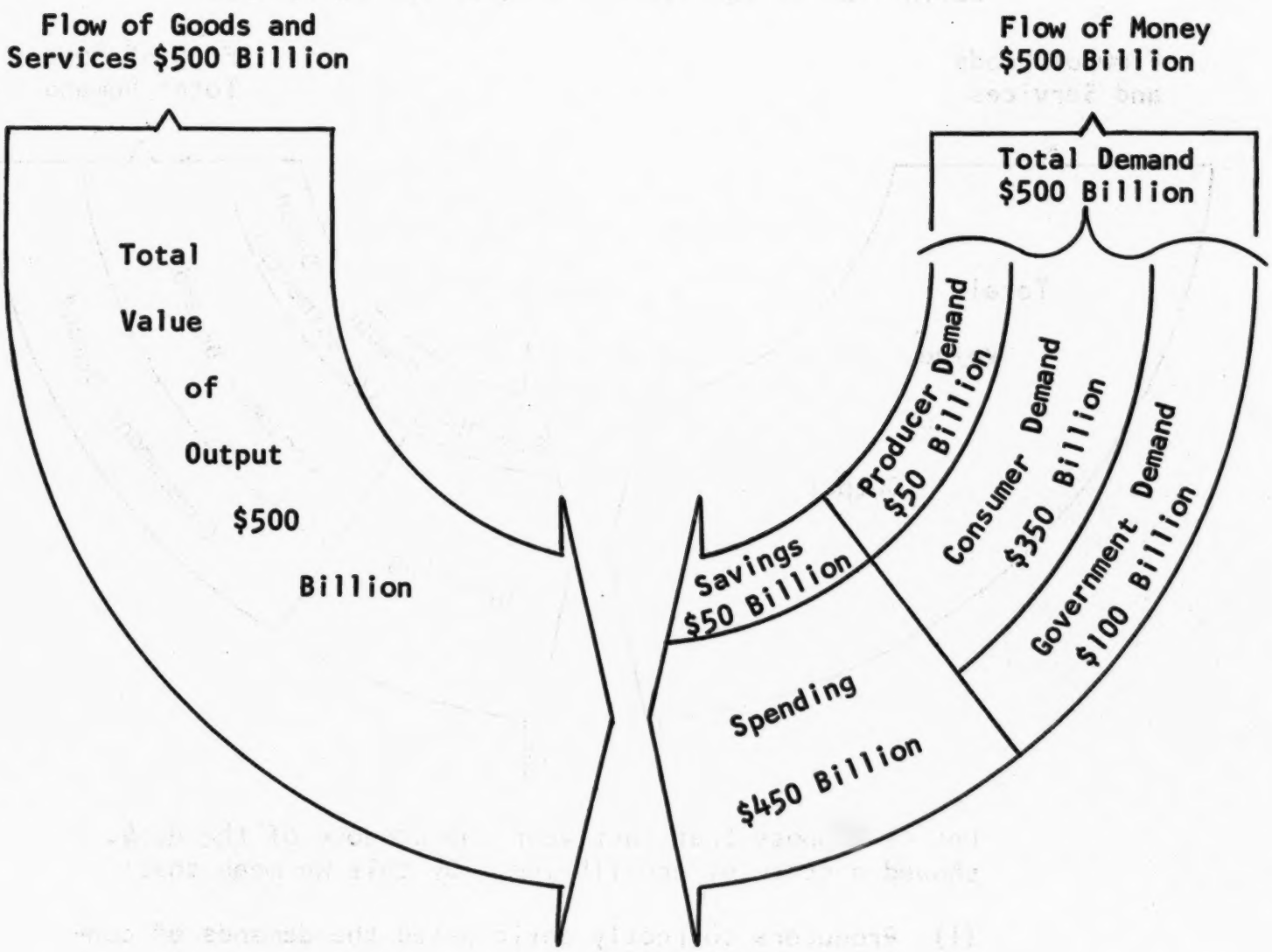
(2) Consumer demand - - - - $350 Billion

(3) Producer demand - - - - $ 50 Billion

(4) Government demand - - - $100 Billion

Have the students insert these figures in Diagram II.
Note: The diagram is blank in the Student Materials.

Diagram II


Flow of Goods and Services $500 Billion
Flow of Money $500 Billion
Total Value of Output $500 Billion
Total Demand $500 Billion
Savings $50 Billion
Spending $450 Billion
Producer Demand $50 Billion
Consumer Demand $350 Billion
Government Demand $100 Billion

Total Value of Output $500 Billion = Total Demand $500 Billion

Notice that this expanded definition of equilibrium still implies that savings are equal to investment. (Producer demand).

How will we show a picture of disequilibrium in the U. S. economy? Suppose the amounts of money involved in the flows were as follows:

(1) Total value of output - $500 Billion

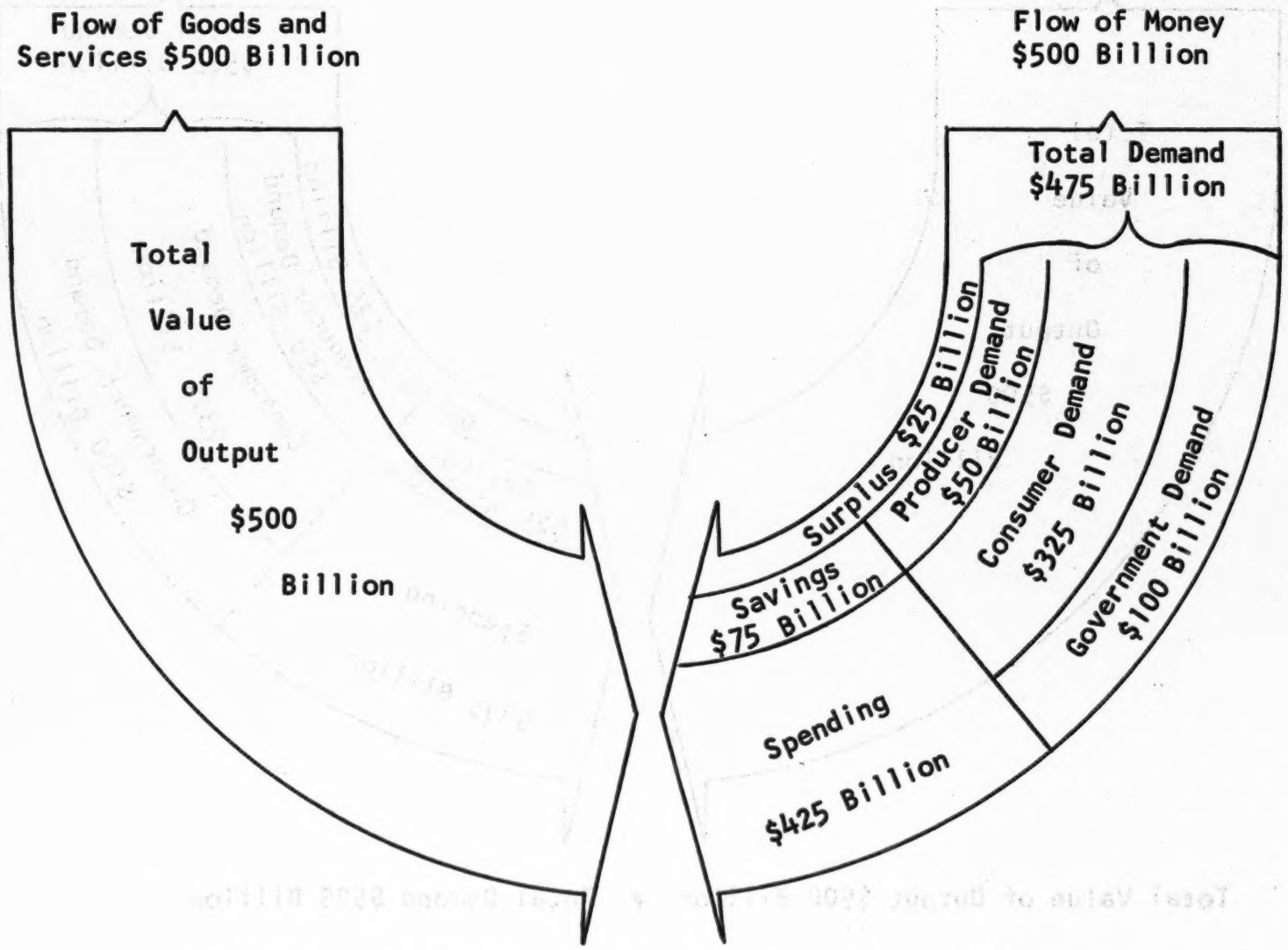
(2) Consumer demand - - - - $325 Billion

(3) Producer demand - - - - $ 50 Billion

(4) Government demand - - - $100 Billion

Using the figures above, have the students complete Diagram III. The student will find that Diagram III contains a slight modification of Diagram II. The section of the flow of money arrow labeled savings is followed by two divisions instead of one. Diagram II showed equilibrium; consequently, the total amount of savings was accounted for by one division--producer demand. The extra division incorporated in Diagram III provides space for entering any inequality between savings and investment. See if some of the students will find a use for the extra division of savings for themselves. Note that in the equilibrium example, in this example, and in the next example the total value of output, the producer demand and the government demand have been held constant. Only the consumer demand has fluctuated. This is not a realistic assumption, and in the subsequent learning situations it will be modified.

Diagram III


Flow of Goods and Services $500 Billion
Flow of Money $500 Billion
Total Value of Output $500 Billion
Total Demand $475 Billion
Surplus $25 Billion
Producer Demand $50 Billion
Consumer Demand $325 Billion
Government Demand $100 Billion
Savings $75 Billion
Spending $425 Billion

Total Value of Output $500 Billion ≠ Total Demand $475 Billion

Another type of disequilibrium might also occur when the amount of money in the flows is as follows:

(1) Total value of output = $500 Billion

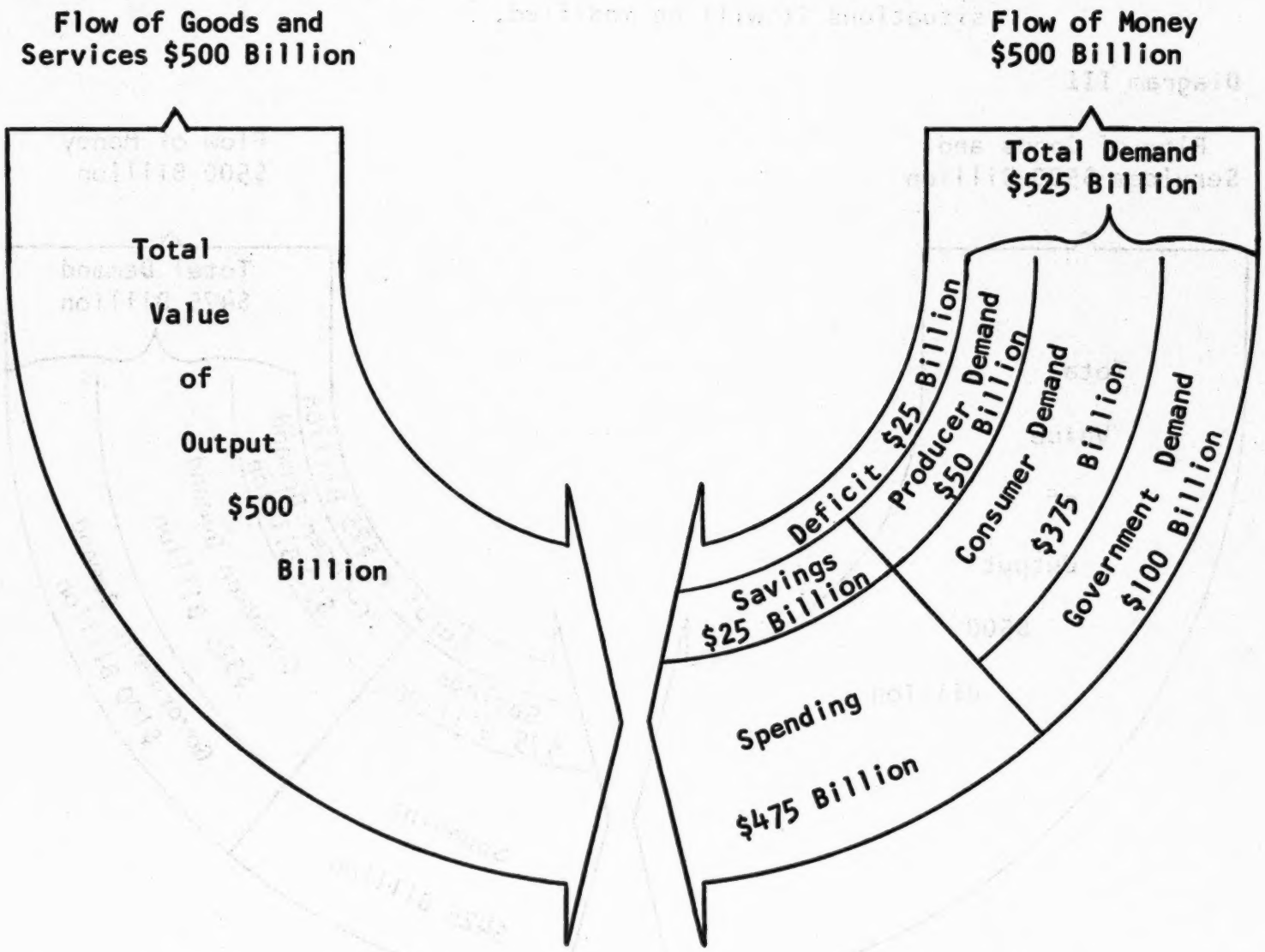
(2) Consumer demand = $375 Billion

(3) Producer demand = $ 50 Billion

(4) Government demand = $100 Billion

Have the students use these data to complete Diagram IV.

Diagram IV


Flow of Goods and Services $500 Billion
Flow of Money $500 Billion
Total Value of Output $500 Billion
Total Demand $525 Billion
Deficit $25 Billion
Producer Demand $50 Billion
Consumer Demand $375 Billion
Government Demand $100 Billion
Savings $25 Billion
Spending $475 Billion

Total Value of Output $500 Billion ≠ Total Demand $525 Billion

Note: Diagrams II, III, and IV will be left blank in the Student Materials.

We have seen that disequilibrium may occur in two forms where:

(1) Total value of output is greater than total demand.

(2) Total value of output is less than total demand.

Only the consumer demand has changed in the examples used above, but changes may occur in any of the sectors to cause the balance to be thrown off. We will see later how the level of expenditures of any sector has an effect upon the equilibrium.

3. Third Situation: Disequilibrium and the Multiplier (Student Materials, page 625)

a. Disequilibrium occurs in two forms. The last situation showed that the total value of output could be more or less than the total demand. You will recall that in Diagrams III and IV of the second situation only consumer demand varied while producer demand, government demand, and total value of output remained constant. We said earlier that this condition was unrealistic. It is unrealistic to assume that changes in consumer demand would not also bring about changes in producer and government demand. We saw in Unit 10 that expenditures, as outflows from one sector, became inflows to another sector. Therefore, changes in the level of consumption expenditures (consumer demand) will set off a chain reaction of changes in the flows of the other sectors. Furthermore, there is no reason to assume that a chain reaction may originate only in the consumer sector.

b. In this learning situation we will see that a chain reaction may be set off by changes in any of the sectors in the economy and may in turn have a multiple effect upon other sectors and the economy as a whole.

It is suggested that the teacher introduce the idea of an economic chain reaction by relating to the class a simple situation in which the consumer demand is less than output. Take, for example, a person who sells pencils and is usually able to sell around $10 worth each week. What is likely to happen if he is only able to sell $5 worth in one particular week? How is he apt to react to the following week's pencil peddling? What would you do--buy more pencils or cut back on your pencil buying? How would your decision affect the pencil producer?

In a real economy the reactions of the pencil seller would be multiplied several million times since all sorts of decisions about different kinds of goods and services must

be made. If the total demand for goods and services is reduced, what kinds of effects might be expected in reaction to the lowered demand? This situation in which the total demand for goods and services is less than the total production can serve as the focus of a discussion. The essential point which should be emphasized is that a change in the total demand of the economy will set off a chain reaction of economic activities, reactions, and decisions.

Questions to Focus Discussion:

If total value of output > total demand, then:

(1) How will the lower consumer demand influcence the decisions of the producing sector of the economy?

(2) What will the effect of the producer's decisions be upon the total value of output?

(3) Will the decisions made by the producing sector have any effect upon the income of the consumer sector or government sector? Explain.

(4) If the income level is changed, what influence will the new level have upon the total demand for goods and services during the next time period?

The chain reaction of this situation may be pictured on the chalkboard in the following manner:

When the total value of output is greater than the total demand for goods and services ⟶ (1) Production will be cut back to meet new level of demand ⟶ (2) Lower production of goods and services leads to less demand for producer goods and services ⟶ (3) Decrease in production leads to lower levels of income to consumers ⟶ (4) Lower income levels will reduce demand for goods and services further ⟶ (5) Reduced demand ⟶ (6) Repetition of (1) through (5) ⟶ Recession or Depression.

The classic example of this situation, inadequate demand disequilibrium, is the Depression of 1929-39 in the United States. A brief discussion of the Depression will provide good insights into the social effects of this form of disequilibrium.

When the economy is in a state of disequilibrium of the form where the total value of output is less than the total demand for goods and services (inadequate supply) a chain reaction may also be observed. The outcome of this chain reaction will depend upon the level of employment of the factors of production. If the economy is operating at full

capacity, that is, all the factors of production are being utilized, then the demand for production of more goods and services cannot be met. This situation may lead to inflation, as explained below. On the other hand, when there is some unused capacity to produce, disequilibrium of inadequate supply can bring about an increase in the total output of goods and services. A discussion of this type of disequilibrium will illustrate the chain reaction and the results of the chain reaction under conditions of full or partial employment of the factors of production.

Questions to Focus Discussion:

When economy is fully employed and the total value of output is less than the total demand, then:

(1) How will producers react to try to meet the greater demand for goods and services?

(2) How will their (the producers) decisions influence the levels of output and demand?

(3) What effect will the producers' decisions have upon total income of consumers?

(4) How will the new levels of income (if different) influence the total demand for goods and services?

The result of this situation will be inflation, i.e. the price of goods and services will be raised in order to reduce the demand for actual goods and services. Again, the chain of events may be shown as follows:

If economy is using the factors of production at full capacity, when the total value of output is less than the total demand for goods and services ⟶ (1) Producers will raise prices of goods and services ⟶ (2) To meet increased prices consumers seek and may obtain higher wages ⟶ (3) Higher incomes create even greater demand for the same amount of goods and services ⟶ (4) Repeat (1) through (3) ⟶ Inflation.

On the other hand, if there is unused capacity available when the economy is in disequilibrium with total value of output less than total demand for goods and services, then the chain reaction will have a different effect upon the economy.

Questions to Focus Discussion:

When the economy has unused capacity to produce and the total value of output is less than the total demand for goods and services, then:

(1) How will producers react to the higher demand for goods and services?

(2) What effect will the decisions of the producers have upon the total level of output?

(3) If the output is increased, total income to consumers will also go up. What effect will the new levels of income have upon the total demand for goods and services?

The result of this situation will be growth of total output. It may be shown as follows:

If the economy is operating at less than full capacity and the total value of output < total demand for goods and services ⟶ (1) Production may be increased to meet demand by using available factors of production ⟶ (2) Total output is increased as well as total income ⟶ (3) Increase in total income pushes up demand for goods and services ⟶ (4) Repeat (1) through (3) ⟶ Growth. (Growth continues until the factors of production are fully utilized.)

c. Up to this point the discussions have been concerned only with the results of the various types of disequilibrium but not with the amount of growth, depression or inflation. The amount of growth, depression or inflation experienced by the economy will be determined by the magnitude of the chain reaction. When all the reactions are considered, a multiple effect can be seen as the result of an initial change in the magnitude of expenditures by one or more sectors. This effect is known as the multiplier.

Have the students read through the following:

The Multiplier in Action

The Student Council of Central High School was holding its biweekly meeting when the representative of the Student Athletic Council announced that his club had received $100 as their share of the proceeds from ticket sales at athletic events. The Athletic Council had decided they needed a new ticket booth and were willing to pay the Industrial Arts Club $80 to build it for them. This was an offer the Industrial Arts Club could not reject. The Industrial Arts Club had just given an exhibition of their projects and had asked the Photography Club to shoot pictures of it. For all the photographic work, the printing and framing of the pictures, the Industrial Arts Club paid the Photography Club $51.20. The photographers had to have the frames for the pictures made by the Art Club, and they paid $41 for these frames. The Art Club in turn paid the School Newspaper $32.80 to have several pages of their artwork published in the paper. The remaining money was received and spent among the various clubs in the school. Each of these transactions became successively smaller and smaller in amount. For example, one of the

last few transactions was the Cheerleaders' purchase of ten cents worth of confetti from the school store.

The table below follows the flow of income generated by the original $100.

Period	Income to Clubs	Consumption Expenditures	Savings by Clubs
0	0	0	0
1. Student Athletic Council	$100.00	$ 80.00	$ 20.00
to			
2. Industrial Arts Club	80.00	64.00	16.00
to			
3. Photography Club	64.00	51.20	12.80
to			
4. Art Club	51.20	41.00	10.20
to			
5. School Newspaper	41.00	32.80	8.20
6	32.80	26.20	6.60
7	26.20	21.00	5.20
8	21.00	16.80	4.20
9	16.80	13.40	3.40
10	13.40	10.70	2.70
11	10.70	8.60	2.10
12	8.60	6.90	1.70
13	6.90	5.50	1.40
14	5.50	4.40	1.10
15	4.40	3.50	.90
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.
All other Periods	17.50	14.00	3.50
Totals	$500.00	$400.00	$100.00

Question: How much money from outside the Student Council came into the funds of this group?

Answer: $100--The original income from the sale of tickets at athletic events.

Question: How much money was saved through the whole series of transactions among the clubs at Central High?

Answer: $100--In the first transaction the Athletic Council saved $20 of their income of $100, in the second transaction the Industrial Arts Club saved $16, in the third transaction the Photography Club saved $13.80, the Art Club saved $10.20 and the Newspaper saved $8.20 and so on till all transactions were completed. The total savings was $100.

Question: From the original $100 earned by the Athletic Council, how much income was created for all the clubs of the school?

Answer: $500--The Athletic Council earned $100 selling tickets, the Industrial Arts Club, $80 for building a new ticket booth, the Photography Club $64 for their work, the Art Club received $51.20 from the Photography Club, the Newspaper earned $41 for services to the Art Club, and so on till the total reached $500.

As was shown in the table above and the questions and answers which followed the table, the change of expenditure of $100 created by the income from ticket sales resulted in a total increase in income of all the groups in the school of $500. This example shows the multiple effect of a change in the level of expenditures. This effect, called the multiplier, is determined by (1) the size of the original change in expenditures and (2) the tendencies of consumers to spend and save. The amount of additional income which is used to buy goods and services is known as the marginal propensity to consume or MPC, and the amount saved is referred to as the marginal propensity to save or MPS. The MPS is determined by subtracting MPC from the total disposable income. MPS is sometimes referred to as the leakage from total income. These terms are used in determining the multiplier. The formula for the multiplier is:

$$\text{multiplier} = \frac{1}{1-\text{MPC}}$$

For example:

(1) In the case of Central High School, 80% of income was spent (MPC) in each of the transactions leaving 20% leakage (MPS). When leakage is 1/5 (20%) expressed as a fraction, then the multiplier = $\frac{1}{1-4/5} = \frac{1}{1/5} = 5$.

(2) If the MPC = 75% and MPS = 25% or 1/4, then multiplier will be $\frac{1}{1-3/4} = \frac{1}{1/4} = 4$.

(3) Determine the size of the multiplier when:

(a) MPC = 66 2/3% (Answer: 3)

(b) MPS = 50% (Answer: 2)

THE FLOW OF GOODS AND SERVICES AND THE FLOW OF MONEY

Unit 12: Role of Money and Financial Institutions

Part I: Sequenced Outline

I. From your own experience and background and from the Teacher's Guide, you know that one cannot discuss economics without considering the nature and role of money. The notion of money has been used in our discussion of prices and of the measurement of the size of the GNP. It is appropriate now to consider the role of money and financial institutions in the flow of money. In this unit, we will emphasize the functions of money and financial institutions. In Unit 13, we will show how banks and the Federal Reserve System influence the money supply and credit.

II. Let us first consider the functions of money and relate these to the flow of money.

A. Most obvious, but not always understood, is that money serves as a medium of exchange. A purchase or sale for money means that one is involved in an indirect barter, that is, a good or service is traded for money which in turn is traded for another good or service.

1. Anything used as the middle item in the indirect barter serves as money and could be formally recognized as money. Boys and girls when they are trading cards or bottle tops often settle on one of them as "money" because it is most wanted and one can be sure in accepting it that another will accept it later. Money then is not a thing but a quality. One could speak of something having various degrees of "moneyness."

2. Money functions in markets when purchases and sales are made. When a chain of markets is involved in producing a good or service, then money is the link between these stages of production which make up the flow of goods and services.

B. Money serves as a standard or measure of value. A good or service is measured in money, which is a way of saying that it is worth this much money which, in turn, will be worth a certain amount of goods and services.

1. We have already examined the problem of the relation of value and prices in Unit 8. We know that an increase in prices would make a given amount of money worth less in goods and services. We took this fact into account when adjusting the Gross National Product for price changes.

2. Money as a measure of value also makes it possible to measure the dollar value of the total output of the economy (GNP). Recall, we found the total figure for the flow of goods and services

by summing up the value added in dollars at each stage of production.

3. Another use of money, often listed separately but closely related to prices and the value of money, is that money can be used to represent debt and thus serve as a standard of deferred payment. Prices may change over a period of time and so the value of money would vary. When paying back $100, it may be that it is worth more or less than $100. Debt relations, however, are not figured in the GNP, for we are focusing there on the goods and services produced in a given year.

C. Money also serves as a device for transferring the ability to buy from one individual to another.

1. When money is lent or a stock or bond is purchased from a corporation, purchasing power has been transferred. Since money really is a claim on goods and services, one is transferring this claim to another.

2. The fact that purchasing power can be transferred through money is the basic circumstance which makes possible banks and financial institutions. The banks and other financial institutions, as we shall explain later in this unit, become intermediaries in the flow of money.

D. Finally, as everyone knows, one can hold the money and not spend it. When this is done, money has served as a store of value, that is, a way of keeping one's claim on goods and services.

1. Money may be stored by spending it less frequently (not buying the shoes this week but waiting) or by depositing the money in the bank (supposing the bank does not lend it immediately).

2. The storing of value, or a claim on goods and services, is a part of the saving process which we examined in Units 10 and 11.

III. Now we know the jobs which money must perform and how these tasks are related to the flows. Next, we need to know the kinds of money.

A. Money is of two basic sorts:

1. Currency (printed money and coins)

2. Deposits

a. Demand deposits (often called checking accounts)

b. Time deposits (often called savings accounts)

B. A few basic facts about currency will be helpful.

1. Data for currency in circulation can be obtained from the monthly issue of the Federal Reserve Bulletin, or from the Statistical Abstract of the U. S. These figures are from the Federal Reserve Bulletin, June, 1965.

Total currency in circulation $38.7 Billion = 100%

Federal Reserve Notes	$33.8 Billion = 87%
Treasury Currency (Silver Coins, Nickels and Pennies, Some forms of paper money, e.g. Silver Certificates being retired).	$ 4.9 Billion = 13%

2. Note, nearly all of the printed money is issued by the Federal Reserve System (discussed in Unit 13). The money is printed and the coins are minted by the U. S. Treasury.

3. The Federal Reserve System is required to hold in reserve, in the form of gold certificates, not less than 25% of the value of Federal Reserve Notes in circulation.

C. Now, a few basic facts about deposits.

1. The deposits we are considering are those in commercial banks (considered below in this unit under Banks and other Financial Institutions). One may, of course, have deposits in other financial institutions, for example, mutual savings banks.

2. Figures for deposits may be found in the sources indicated for data on currency. Here are some recent data for commercial banks.

Demand deposits	$124.3 Billion	(Does not include $10.5 billion of U. S. Government in Commercial Banks).
Time deposits	$134.5 Billion	

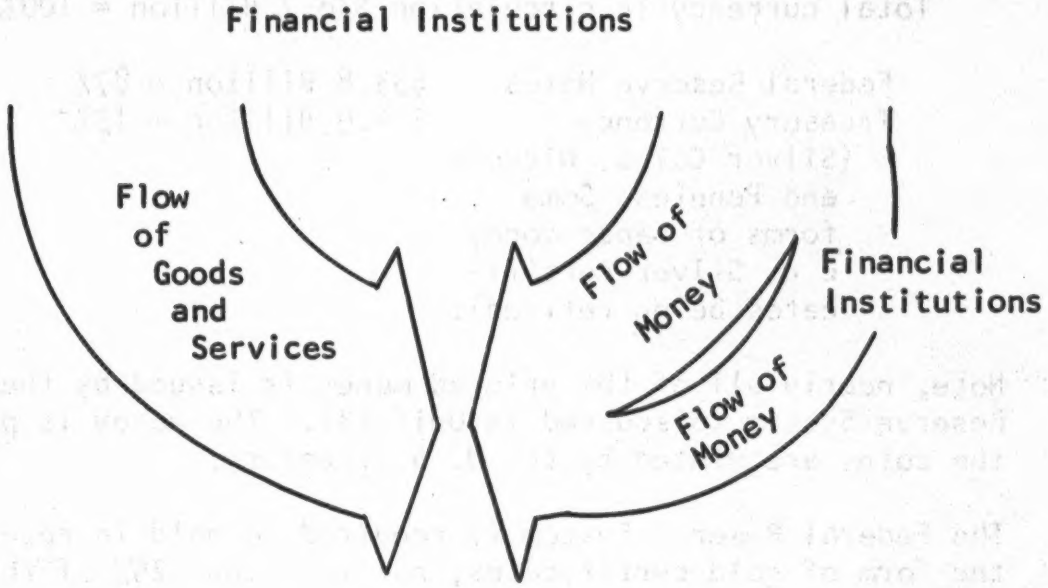
3. Banks are required to hold reserves behind both demand and time deposits. The significance of the reserve requirement will be explained in Unit 13, for there we will see how reserve requirements influence the ability of the banks to create deposits.

IV. Banks and Other Financial Institutions

A. It has already been pointed out, in the description of money as a device for transferring purchasing power, that banks and other financial institutions serve as intermediaries in the flow of money.

1. The word "intermediary" does not mean that the banks are merely passive transferrers; they exercise judgment both as to the direction and quantity of savings which will be transferred.

2. In Unit 13, on the Federal Reserve System, we will examine the methods which the System employs to influence the bankers.



B. The nature and functions of banks and other financial institutions may be more easily understood and compared by placing them in the following grid:

	Sources of Funds	Uses of Funds	Special Characteristics
Financial Institution			

1. By sources of funds, one means the persons and institutions from which a financial institution gathers the funds to lend or invest, e.g. a commercial bank sells stock and also receives deposits.

2. By uses of funds, one means the policies and regulations governing the lending or investing of the funds, e.g. savings and loan associations invest in mortgages.

3. Special characteristics refers to the special nature of the financial institution, determining its operation and regulation, e.g. commercial banks which receive their charter from the Federal Government are known as national banks and are supervised by the U. S. Comptroller of the Currency.

4. One may list many financial institutions but in this unit we will be concerned only with the first four. Characteristics of these financial institutions can be found in texts on economics, general encyclopedias, almanacs.

Commercial banks
Mutual savings banks
Savings and Loan Assoc.
stock market (original issue)
Insurance companies
Personal finance companies
Government agencies
e.g. Federal Home Loan Bank System
Farm Credit Administration

C. Four major financial institutions

1. Commercial banks

a. Sources of funds are: (1) stockholders, (2) depositors, and (3) other banks, including the Federal Reserve System.

b. Uses of funds: for all commercial banks, the major customers are: commercial and industrial loans, real estate, consumers, brokers loans, other.

c. Special characteristics: (1) State banks receive their charters from the state, national banks from the Federal Government; (2) Commercial banks may create deposits (discussed in Unit 13).

2. Mutual Savings Banks

a. Sources of funds are the depositors.

b. Use of funds: most of them invested in mortgages, the rest in government and other securities.

c. Special characteristics: New directors chosen by older ones; dividends paid on earnings of the mutual savings banks, not a fixed rate of interest.

3. Savings and Loan Associations

a. Source of funds; if stock type of association, funds come from stockholders and depositors; if mutual type, which is the predominant one, then from depositors.

b. Use of funds: for home construction, purchase or repair.

c. Special characteristics: May receive charter either from the state or from the Federal Government (through Federal Home Loan Bank Board).

4. Stock market (original issue--primary market)

a. Source of funds: the part of the stock market which is engaged in the sale of an original issue of stocks and bonds.

Issues may be sold through investment bankers or by direct placement with buyers. For most people, the stock market means buying and selling already issued securities.

b. Use of funds: the corporations which receive funds from the sales of their securities may use them to pay off old securities or for new or additional money capital.

c. Special characteristics: Both the market for original issue and for the re-sale of issues are supervised by the Securities and Exchange Commission.

THE FLOW OF GOODS AND SERVICES AND THE FLOW OF MONEY

Unit 12: Role of Money and Financial Institutions

Part II: Outline of Teaching Suggestions

I. Comments on the Content

A. Problems in teaching the concept

1. Perhaps the greatest difficulty in presenting a careful analysis of money and financial institutions is that familiarity deludes many into thinking they already understand.

2. Perhaps many of the characteristics discussed in this unit have been covered earlier in the curriculum, but here we are stressing the role of money and financial institutions in the flow of money.

3. In the discussion of money, emphasis is placed upon the multiple roles which money is expected to play, that is, we are stressing the fact that an institution may have multiple responsibilities.

4. With regard to the role of financial institutions as collectors and distributors of funds, we will be trying to correct the impression that money is put in banks which then immediately, fully and automatically lend it. Bankers may exercise judgment and that judgment can be influenced.

B. The concept as part of the unfolding structure

1. Scarcity: The notion of scarcity includes that of relative scarcity, that is, some goods and services are scarcer than others. These relative values, measured in money, are expressed as prices.

2. Flows: The various roles of money, as medium of exchange, as measure of value, etc., all provide a quantitative basis for the concept of flows.

3. Coordination: Money and financial institutions provide linkages and channels through which the economic activity can be coordinated. The role of banks and other financial institutions also make it possible to direct economic activity through the influence over the flow of money.

4. Marginal analysis: Economic decisions and fluctuations in the flows both focus on choices, that is, what action will be taken with regard to the last unit of expenditure, measured of course in money.

5. Institutional factors: The existence of money, its functions and those of financial institutions are profoundly influenced by cultural factors affecting the trust one puts in money, in financial institutions and the stability and responsibility of government.

II. Comments on the Learning Process

A. Vocabulary: Again, familiarity may lead the student to believe that he knows what money "means". Perhaps a good way to introduce him into greater appreciation of the concept of money is to stress that it is a quality and that objects may have more or less of such a quality. For example, U. S. Government Savings Bonds (Series E) can be easily and quickly redeemed, so many economists refer to such highly liquid assets as "near-money".

B. Mathematical concepts and skills

1. Some of the problems in measurement with money have already been covered in Unit 8 in the discussion of prices and the value of money.

2. We see in this unit that even though money may not be a steady and exact measuring device, nonetheless one can use such an imprecise instrument for trading, measuring and storing value. The mathematical lesson contained here is that approximate measurements can be very powerful and useful.

3. Since money can be used to express the value of a number of different items, the use of money illustrated the advantage of being able to reduce values or make comparisons in a common denominator. We also make comparisons by index numbers by the use of percentages and with various ratios.

4. Financial institutions may receive money as a deposit or a check upon another bank. In either case, their records of assets and liabilities represent numbers of figures which are used to represent what they own and what they owe. Dollar figures in the books are obviously not the same as currency.

C. Ability to generalize

1. Anyone who uses money has already demonstrated his ability to generalize, for money is itself a general expression of the value of an endless number of goods and services. To say, "10¢ worth, please," is to express a very great capacity to generalize.

2. Nearly everyone "keeps a set of books" when he says, "I have a bicycle worth $30 and $10 in the bank."

D. Background

1. Of course, some students may have had a limited experience with some of the dimensions of money, for example, its changing value when prices rise.

2. Likewise, while students may have some exposure to the notion of banks, it is unlikely that they have known a variety of them and therefore be able to imagine them as social institutions for gathering and disbursing funds.

III. Learning Situations

A. From Teacher to Teacher

The flow of money is itself the expression of demand for goods and services. The GNP and its component parts were examined with the aid of the concept of money. We were able to use money to discuss the flows because students are generally familiar with money in their own personal experiences. In the past units we have seen how the flows may be affected by changes in supply and demand (always expressed in monetary terms) but we have not attempted to see how money itself may act upon the flows. In this unit we will examine the nature of money and financial institutions so that in Unit 13 the influence of money on the flows may be explained.

Over the years a great variety of things have been used for money, from slaves, cattle, and beads to paper, precious metals, and gems. A definition of money, therefore, should not be based upon outward physical characteristics. Furthermore, the money which is used and accepted by one society may not be acceptable to another society. Although money may not be defined in terms of outward characteristics, it can be defined in terms of the functions it fulfills in the economy. Through the example of the prisoner of war camp, the first situation attempts to have students explore the basic functions of money, which are: 1) a medium of exchange, 2) a measure of standard of value, 3) a vehicle for transferring purchasing power, and 4) a store of value. The situation is concluded by pointing out that a society may choose several items to be used simultaneously to fulfill the four functions of money, namely bills, coins, and checks.

The size and complexity of financial operations necessitates the creation of financial institutions which can assure the society that money will fulfill its four basic functions. The second situation concentrates on the discovery of the need for financial institutions and the need for a <u>variety</u> of financial institutions to fill a variety of financial goals. A role-playing technique is used to involve the students in the difficulty of carrying out financial transactions without the services of a financial institution. The situation is arranged to bring out the need for different kinds of financial institutions which can handle a variety of financial needs.

Concurrent with the need for financial institutions is the need for a flexible money supply, as demonstrated in the third situation. This demonstrates that with an increase in production and population, a static money supply complicates the problem of growth. This situation emphasizes the need for flexibility in the money supply.

B. Sequenced Learning Situations

1. First Situation: The Functions of Money (Student Materials, page 631)

a. In previous units we have used the term "money" quite frequently and freely without any specific qualifications. Since the term is familiar to the students from their experience, no difficulty in using and understanding money has occurred. When asked to define money, most students may cite some examples of things which may be used as money or they may describe it as something which may be used as a medium of exchange for goods and services. In this situation we will be seeking an operational definition of money rather than a qualitative one. It is frequently said that money is what money does. We are asking, "What does money do?" What are the functions which money performs?

The complexity and awkwardness of barter economy led to the invention of money as a medium of exchange. The primary function of money is as a medium of exchange. That is, money represents a claim on goods and services acceptable to the members of a society. In addition to serving as a medium of exchange, money also functions as a vehicle for transferring the ability to buy, as a standard or measure of value and as a store of value through the saving process. Anything which a society designates as money fulfills these functions to some degree.

b. An investigation into the functions of money may be introduced by asking students to respond to the following:

> Suppose that your parents gave you an allowance of $1 per week. List all possible uses you could make of it.

As the class responds with their lists, the teacher may wish to record the items on the chalk board. The following is one such possible list:

Movies
Candy
Football game
Juke boxes
Savings account
Gift (United Appeal, friend, church)
Lending

It is likely that students will at first think only of using their dollar to buy goods and services. The teacher should attempt to elicit responses leading to the idea of saving, loaning and giving money as possible functions of money. This may be done by asking a few leading questions such as:

(1) If you have bought all you desire and still have some money left, what might you do with it?

(2) What is the difference between the function of your dollar when used to buy goods and services, when used as savings and when given away or loaned?

These are suggested questions--the teacher will have to use his own judgment as to the amount of prodding necessary to lead students to an understanding of the basic functions of money; i.e. to view money as:

(a) a medium of exchange (when used to buy goods and services)

(b) a means to transfer the ability to buy goods and services (when used as a gift to United Appeal or when loaned)

(c) a store of value (when used as savings)

NOTE: Hopefully, previous units (7 & 8) have already made it clear to the student that an important function of money is its use as a convenient measure of the value of goods and services.

c. To illustrate the basic functions of money and the requirements which money must meet the students should be asked to read the following story:

Welsh's Warehouse

"Achtung! Achtung," the loud-speaker blared across the compound of Stalag X. What followed was a dismal repetition of orders, details and regulations which, the commandant continually reminded the American Prisoners of War, were necessary for the operation of a "successful Prisoner of War camp."

Standing in the cold December breeze the prisoners were not particularly impressed with Herr Gratz' appeal for a good camp. As Dave Welsh from New Jersey commented "Who the heck wants to be a successful Prisoner of War?" On this particular morning however, the commandant personally made the announcements and then added that a special treat was in store for the men - International Red Cross representatives would distribute Red Cross Christmas boxes to all prisoners later that afternoon.

In spite of the barbed-wire and German guards there was an almost festive mood as the prisoners lined up to receive their packages. While not entirely starved at the camp, they missed the variety of "state-side" cooking and eagerly awaited the canned fruit, candy, gum and even the hard cookies which were usually included in the Red Cross gifts. Another item which was important even to non-smokers was the tobacco and cigarette allowance.

That evening the barracks were the scene of pre-Christmas celebrations as the prisoners traded those items they didn't want for those they wanted. Razor blades were swapped for candy, gum and soap by some of the prisoners who were young enough to get by without shaving. Although Dave Welsh was opposed to being a successful prisoner, he saw no harm in being a successful trader and it was his footlocker which became the center of activity in the weeks following a package distribution. With a craving for candy and "soap that lathers" he had used his razor blades and cigarette ration to satisfy his needs and also build up enough extra to satisfy the needs of others - that is if they were willing to trade with him. Even the German guards were known to make use of Dave's supply of extras, bringing him fresh fruit or eggs in exchange for the much coveted American tobacco or candy.

At first, the trading around Dave's footlocker was quite informal and there was no particular rule which made so many cigarettes worth so much soap. However, after a disagreeable dispute over the fact that Dave had charged one man five cigarettes for one candy bar while charging another three for the same kind of bar, he set up a rate of exchange in which all items traded were given a cigarette value. On the next trade day the prisoners watched Dave pin his exchange rate above his locker. It read:

NOTICE TO ALL GIs

From November 1, 1944 the following exchange rates will be official at "Welsh's Warehouse":

1 bar soap = 2 cigarettes
1 candy bar = 4 cigarettes
1 razor blade = 6 cigarettes
1 can fruit = 8 cigarettes
1 can cookies = 20 cigarettes

Soon Dave's exchange list was accepted by the whole camp and much of the friction over unfair exchanges or favoritism disappeared.

Dave wasn't particularly known for his generosity but sometimes he was persuaded to loan cigarettes to men who had used up their own ration, and on the occasion of the American group leader's silver wedding anniversary he donated some cigarettes so that the German cooks could be bribed into baking a cake. In spite of all the difficulties of camp life "Welsh's Warehouse" helped make it a little more tolerable.

In the spring of 1945, however, all this changed. With Allied bombing missions taking a steady toll of German bridges and railroads the German authorities began to use Prisoners of War as repair crews. Dave Welsh was assigned to one such crew and was gone from the camp for almost a week. And what a week it was--heavy spring rains made road and bridge work extremely difficult and when Dave returned to the camp, flooding had swamped the barrack's floor and left the contents of Dave's locker a soggy mess. Razor blades were rusted, candy bars molded and the cigarettes fell apart as Dave lifted them from the locker.

A week ago Dave had been the center of camp life and the men used his judgment as the measure of what items should cost. Now he could hardly give away what last week had been the most valuable items in the camp. One heavy spring rain had changed him from a successful trader to just another successful prisoner of war.

After reading "Welsh's Warehouse" the teacher should engage the students in a discussion using these questions to focus upon the functions of money and the basic requirements which money must meet.

(1) Describe the economic functions which cigarettes served in the camp.

(2) How similar was the POW use of cigarettes to our own use of dollars?

(3) Why were cigarettes used at all?

(4) What advantages did cigarettes have over, say canned fruit?

(5) What disadvantages did they have compared to dollars?

(6) In order for an item to be used as money, what conditions must it fulfill?

Another approach might be to give the students the three basic functions of money and have them identify these functions in the story.

For example: How were cigarettes used as a medium of exchange, as a standard of value, as a means of transferring the ability to buy?

Similarly, the basic requirements which money should meet may be listed, and students may be asked to relate the requirements to the story.

e.g. For an item to be used as money it must be: durable, transferable, and acceptable. In what ways do the items in "Welsh's Warehouse" meet or fail to meet these basic requirements?

d. At this point the teacher should indicate that there are different forms of money in existence. Some primitive societies use shells, fishing hooks, and stones as money. Even in industrially advanced societies several things may function as money. The following dialogue shows how checking deposits are a form of money.

Checks as Money

Setting: Hal has just started his new job as a paperboy and wants to open a bank account in which he could deposit his newly earned money. He is now at the bank talking to the banker, Mr. Glick.

Mr. Glick: May I help you?

Hal: Yes, I am earning my own money now, and I would like to open a bank account.

Mr. Glick: Do you want to start a savings account or a checking account?

Hal: I don't know. What is the difference between the two?

Mr. Glick: With a checking account you bring your money into the bank and give it to one of our tellers who will make an entry on your account telling how much you deposited. Then you can write checks to other people on the account which you have acquired. When a check is cashed, the amount is subtracted from your account.

Hal: That makes it sound really simple. Everything is right there on paper to see. What is the difference between this and a savings account?

Mr. Glick: With a savings account you can not write checks. The only way you can use the money is to come in and ask for a withdrawal. With a checking account you do not really need cash because you can write a check which serves the same purpose.

Hal: Checks are really another kind of money, aren't they? Which would be the best kind of account for me? I am going to have to pay the newspaper company for my papers every week, and I still owe $20 on my bike. Also, my Dad thinks I ought to learn to keep track of my money. He says I don't know what I spend it on.

Mr. Glick: Well, in that case I think a checking account would be best for you. Then you could just write a check to the newspaper and the bicycle shop.

Hal: Yes, I think you're right. Do a lot of people have checking accounts?

Mr. Glick: Yes they do. Today people in the United States have about $38 billion in the form of coin and currency, but they have over $125 billion in checkbook money. In fact, it is estimated that Americans use checks for about 76 per cent of the money value of all goods and services.

Hal: Wow! I can't even imagine that much money. I have another question. If people pay me with a check, do I have to change it into cash before I can deposit it in my account?

Mr. Glick: No. You can deposit it as you would coins or currency. The bank will then credit this amount to your account and subtract it from the account of the person who wrote the check.

Hal: You mean no money is really exchanged?

Mr. Glick: Right! It's simply a matter of subtracting from one account and adding to another.

Hal: But what if a person who has a checking account in another bank gives me a check? Do you just go to the other bank and get the money from them, or do I have to cash this check before I make a deposit?

Mr. Glick: No. You can still deposit the check in your account. This is because most banks have accounts in the Federal Reserve Bank. The amount of the check you deposit with us will be added on to our account and subtracted from the account of the other bank. This is all done very quickly. In fact, it only takes a few days for banks on different sides of the country to balance their accounts, although it used to take weeks.

Hal: Thank you, Mr. Glick. I never realized what was involved in a checking account. Now I would like to open one so that I can use it for myself.

Questions to focus discussion:

(1) What are the different kinds of money mentioned in the story?

(2) In what way do checks fulfill the functions and requirements of money?

(3) In what way do they not?

2. Second Situation: Financial Institutions (Student Materials, page 110)

a. Because we all use money (different forms of currency) every day, we have the tendency to forget that money is a symbol and has value only when people agree to its worth. This idea

was implied in Unit 11 when we discussed the changing buying power of money due to inflation and deflation. In other cultures and at other times people have used many different kinds of things in the way paper money and coins are used today. Cattle, circular stones, slaves, beads, nails, and cigarettes have all served as media of exchange. All these various types of money have one thing in common. That is that sizable groups of persons have enough confidence in these items to use them as a basis for exchanging other goods and services. Agreement about what is to be used as money is essential. If there is no agreement, then the economy is a trade or barter economy.

Since many different articles may be used as money, what is used as money may be changed from time to time. These changes occur when many people lose confidence in the old form of money or when many people begin to value some other article more than the old form of money.

b. The main idea expressed above was that money is a social invention. Items such as cigarettes, beads, gold, and dollar bills continue to be used as money so long as a group of persons place confidence in the items. Over a long period of time it is important that a society be flexible as to what it regards as money, but too much flexibility over a short period of time, say twenty years, does not lead to a feeling of confidence. To protect itself from too rapid a change in its monetary units, society invents institutions to regulate its money. Various kinds of financial institutions, both public and private, have been developed to regulate money. In this learning situation we will discuss the development and operation of private financial institutions. Public financial institutions and their relationship with private financial institutions will be studied in Unit 13. The following demonstration involves the students in a situation which shows the need for a financial institution to act as a clearinghouse for persons who wish to borrow money and for persons who wish to lend money. It illustrates one reason why a society is led to the invention of a bank. Later, we will investigate other services which banks perform and how different kinds of banks specialize in various services.

Preparation: Before the demonstration begins, certain definitions and rules must be given.

Definitions:

1. Net worth--Mr. Miller owns an automobile valued at $2,000, a house worth $18,000, furniture and appliances valued at $3,000, and $2,000 in savings. He owes $6,000 to the bank and $4,000 to his father. We can list the value of

all the things he owns in one column called assets and all the debts he owes in another column called liabilities.

Assets	Liabilities
$ 2,000	$ 6,000
18,000	4,000
3,000	
2,000	
$25,000	$10,000

By subtracting his liabilities ($10,000) from his assets ($25,000) we obtain his net worth which is $15,000. Net worth is a person's assets minus his liabilities.

2. Financial intentions--In this demonstration the term financial intention means the desire of a person to borrow money or lend money or both borrow and lend money.

3. Level of risk--In this demonstration the financial intentions of certain persons are described as a willingness to lend money to other persons at various levels of risk. What are the chances that the loaned money will not be repaid? This is the simple notion of risk used in this demonstration. The levels of risk are numbered in a scale from one to six with the following meaning attached to each number:

6. extreme risk	3. average risk
5. high degree of risk	2. low degree of risk
4. moderate risk	1. very little risk

The higher the number is, the greater the risk.

Demonstration: Every student in the class will be assigned a role to play in the demonstration. The list below contains descriptions of the net worth and financial intentions of an imaginary group of persons. The teacher will assign a letter (A, B, C....Z) or a Roman numeral (I, II, III....X) to each student. At the teacher's signal each student will move about the room trying to find some other person whose financial intentions fit with his own. For example, person R who wishes to borrow $1,000 locates person X who is willing to make a loan at the risk 4 level. Person X then locates someone else to loan the remainder of his money. After three minutes, the teacher will determine how many students were able to satisfy the financial intentions of their assigned role. Each student whose role calls for a willingness to lend money at a certain level of risk will have to judge the level of risk of the person seeking a loan. This judgment is based on the net worth of the person seeking the loan and on the amount of money he desires to borrow.

Rule 1: Every student seeking a loan must properly identify himself by letter or Roman numeral so that the student who has money to lend can check his net worth on the Demonstration List.

Rule 2: Each student will carry a piece of paper and a pencil with which he will record all transactions. For example:

Student's Name--Stephen Lentz
Assigned Role--H

Transactions:

1. Borrowed $1,000 from Jerry Wells (M)
2. Borrowed $1,000 from Susan Zilch (I)
3. Loaned $5,000 to Peter Kranch (P)

The teacher will assign each student a role. Have the students prepare their papers as described above and direct them to wait for your signal to start.

Note: Certain classroom situations may preclude the use of the active demonstration described here. In this case, a discussion of the difficulties involved in getting persons with different financial intentions together without a bank may develop from an inspection of the Demonstration List.

Demonstration List

Person	Net Worth	Financial Intentions
A	$ 10,000	Willing to lend $1,000 at the risk 2 level.
B	25,000	Willing to lend $3,000 at the risk 2 level and willing to lend $2,000 at the risk 4 level.
C	20,000	Seeking a loan of $3,000 and willing to lend $1,000 at the risk 1 level.
D	15,000	Seeking a loan of $5,000.
E	50,000	Willing to lend $10,000 at the risk 2 level and $5,000 at the risk 4 level and $2,000 at the risk 6 level.
F	50,000	Seeking a loan of $20,000.
G	100,000	Willing to lend $30,000 at the risk 3 level, $10,000 at the risk 5 level, and $2,000 at the risk 6 level.

Demonstration List (Continued)

Person	Net Worth	Financial Intentions
H	$ 30,000	Seeking a loan of $5,000 and willing to lend $2,000 at the risk 1 level.
I	10,000	Willing to lend $1,000 at the risk 2 level and $1,000 at the risk 1 level.
J	20,000	Willing to lend $3,000 at the risk 2 level and $1,000 at the risk 5 level.
K	5,000	Seeking a loan of $1,000.
L	5,000	Seeking a loan of $10,000.
M	5,000	Willing to lend $1,000 at the risk 1 level.
N	3,000	Seeking a loan of $3,000.
O	10,000	Seeking a loan of $20,000.
P	10,000	Seeking a loan of $10,000.
Q	2,000	Seeking a loan of $5,000.
R	1,000	Seeking a loan of $1,000.
S	2,000	Seeking a loan of $1,000.
T	5,000	Seeking a loan of $5,000.
U	1,000	Seeking a loan of $5,000.
V	1,000	Seeking a loan of $1,000.
W	20,000	Seeking a loan of $50,000.
X	100,000	Willing to lend $30,000 at the risk 2 level and $10,000 at the risk 4 level.
Y	200,000	Willing to lend $30,000 at the risk 3 level.
Z	500,000	Willing to lend $100,000 at the risk 2 level, $50,000 at the risk 4 level and $10,000 at the risk 5 level.

Demonstration List (Continued)

Person	Net Worth	Financial Intentions
I	$ 45,000	Seeking a loan of $20,000.
II	20,000	Seeking a loan of $30,000.
III	20,000	Willing to lend $5,000 at the risk 1 level.
IV	75,000	Seeking a loan of $100,000.
V	200,000	Seeking a loan of $300,000.
VI	30,000	Seeking a loan of $10,000 and willing to lend $3,000 at the risk 2 level.
VII	20,000	Seeking a loan of $40,000.
VIII	10,000	Willing to lend $2,000 at the risk 1 level and $1,000 at the risk 2 level.
IX	25,000	Willing to lend $5,000 at the risk 3 level and $1,000 at the risk 6 level.
X	5,000	Seeking a loan of $1,000.

c. Suggested questions to focus discussion following the demonstration:

(1) The demonstration illustrated the difficulty of making financial transactions on a person-to-person basis. What things account for this problem? How could these difficulties be minimized? Project the confusion of this small demonstration to the transactions of an entire society, say the U. S.

(2) In what ways could the transactions between borrowers and lenders be made easier and safer?

(3) In simple terms, what is a bank?

(4) What other services, besides helping borrowers and lenders, could banks perform?

(5) In the demonstration we found that different levels of risk are involved in the lending of money. How might these different levels of risk lead to specialization among banks? In our society not all of these specialized institutions are called banks. What other names are used for institutions whose purpose is to deal with financial matters? How do these other institutions differ from one another?

3. Third Situation: A Flexible Money Supply (Student Materials, page 638)

   a. In the first learning situation we saw the functions and requirements of money. In the second situation we saw the needs for banks or other financial institutions through the havoc that would be created without them. In this learning situation we are going to see that not only must we have banks, but it may be helpful to have a flexible money supply.

   b. The demonstration which follows will attempt to show that if the money supply is fixed an increase in both population and production may require changes in the money supply. We are assuming that we wish to keep the same price level, that is, not change the value of money.

      (1) The teacher should choose six people from the class and provide them with six products and with money. These products should differ in value, and it is understood that they are equally desirable to all of the students participating. The money should be divided so that one player gets six dollars, three players get four dollars and two players get two dollars. An example of such a distribution is given below:

NAMES	AMOUNT OF MONEY	PRODUCT	COST
Phil	$6	Record Album	$6
Heather	$2	Paper back book	$2
Sue	$4	Pen	$4
Tim	$4	Cologne	$4
Heidi	$2	Notebook	$2
Peter	$4	Ski Hat	$4

The players will now attempt to buy other products and sell their own to the other students who are participating. This should be allowed to proceed for some short period of time until each of the students has made several transactions. His money supply may be the same as that with which he started or it may be altered. Likewise, he may have the same good or a different one.

(2) Each student is now given a duplicate of his original product so that there are twice as many products with the same number of people attempting to exchange goods. This demonstrates the problem of increased productivity for it is assumed that each student was able to manufacture an additional product through increased efficiency or technology. This will cause problems, however, because the student will not be able to satisfy his desires with the total money supply and prices remaining constant. The students are now instructed to

continue the type of exchange which was carried on earlier, but with the increased number of products. The teacher should allow this attempt at exchange to continue for some period of time while the students attempt to make transactions.

(3) Six more students are now introduced into the game. Each of the already participating students give half of their goods and half of their money to the new participants. These new people can be thought of as relatives who have just migrated to this economy. The existing residents are sharing their goods with the newcomers. These twelve students will then try to buy and sell products from each other at their original prices and with the original amount of money. This will demonstrate an increase in population. The problems of "stretching" a constant money supply will be readily apparent when the students are able to satisfy only a few of their wants.

Questions to focus discussion following the demonstration:

(1) What happened when additional products were added to the economy? Why did this happen? What is a possible solution?

(2) What happened when the population was increased? Why did this happen? What is a possible solution?

The teacher must understand that this is only an approximation of reality for neither goods nor population would make such a sudden jump without other factors being varied. Also, it would probably happen as a joint movement rather than separately as it has been demonstrated. Therefore, care must be taken to point out that this demonstration is not to be taken as an example of reality, but rather an approximation of it.

With these reservations in mind we can ask several other questions.

(1) How could a money supply be made flexible?

(2) Where would an additional money supply come from?

(3) Would printing extra money solve any problems?

In the next unit we will examine how a society creates a flexible money supply. The above questions are linkages to the concepts in the next unit and can serve as a lead-in to the next learning situation.

THE FLOW OF GOODS AND SERVICES AND THE FLOW OF MONEY

Unit 13: Monetary and Fiscal Policies

Part I: Sequenced Outline

I. In this unit we will be probing further the role of money and financial institutions in the flow of money. We will demonstrate how the banks and the Federal Reserve System influence the money supply and how such policies may affect the price level and also the size of the GNP. We will be mainly concerned with monetary policies, but we will point out how they may work in harmony or conflict with fiscal policies, the latter meaning the effects of governmnnt receipts and expenditures on the level of output. (See Unit 11.)

II. The major theme of this unit is the need for a <u>flexible money supply</u> and how commercial banks and the Federal Reserve System may provide flexibility.

A. A flexible money supply means that the supply can be increased or decreased to meet the demands of the economy. Another dimension of a flexible money supply is the ability to influence the <u>direction</u> of the flow of money, that is, who will be allowed to borrow and under what terms.

B. Illustrations of the need for a flexible money supply:

1. Seasonal expansions and contractions, e.g. at Christmas time there is a need for more currency.

2. If the output of goods and services increases, an increase in the money supply will tend to stabilize prices, that is, the price level.

3. If the economy is operating at less than full employment, an expandable money supply is a way of putting idle resources to work.

4. If prices are rising, it is possible to stabilize the price level through monetary policies restricting the money supply.

C. The need for a flexible money supply raises the question, "Who will be responsible for influencing the money supply?"

III. We will first examine the role of commercial banks in influencing the money supply.

A. The commercial bank, like any other financial institution, may determine <u>how much</u> will be loaned and <u>to whom</u>. In other words, the banker's judgment will influence the <u>quantity</u> and <u>direction</u> of the flow of money through his institution. We discussed this responsibility in the previous unit.

B. But commercial banks also have the power to create deposits. Since the demand deposits which they may create are part of the money supply, the commercial banks may therefore influence the money supply.

C. The creation of demand deposits may be illustrated through the following highly simplified balance sheet:

Assets		Liabilities	
Reserves	$ 60	Stock	$100
Cash	340	Deposits	300
	$400		$400

Loan in Cash

Assets		Liabilities	
Reserves	$ 60	Stock	$100
Loans & Discounts	340	Deposits	300
	$400		$400

Loan as Deposit Credit

Assets		Liabilities	
Reserves	$ 400	Stock	$ 100
Loans & Discounts	1,700	Deposits	300 1,700
	$2,100		$2,100

Explanation of balance sheet:

1. In this high simplified illustration, the bank is assumed to hold by law 20% of the original deposit of $300 (i.e. $60).

2. When the loan is made for cash, it is assumed that the bank lends all of its cash and receives in place of it a promissory note indicating that the borrower owes the bank $340. No entry is made for the computation of interest or discount, again to keep the illustration simple.

3. If the loan had been made in the form of a deposit credit, then the <u>maximum</u> expansion would be the creation of $1,700 in demand deposits and the $340 would be counted as part of the legal reserves of the bank. Computation:

$$\$340 = 20\% \times$$
$$x = \$1,700$$

Again no entry has been made for interest or discount.

4. The balance sheet indicates the maximum expansion possible for the banking system with a given amount of reserves and a given reserve ratio. However, the bank system does not lend all of its cash or immediately expand demand deposits to a maximum, nor does a single bank do so.

5. Hence, it is important to know the process of expansion. A single bank may lend as a deposit credit its excess reserves, that is, $340 but the following table shows that an expansion of deposits for the banking system may still take place:

	Excess Reserves	Loan
Bank A	$ 340.00	$ 340.00
Bank B	272.00	272.00
Bank C	217.60	217.60
Others	870.40	870.40
	$1,700.00	$1,700.00

Note: The deposit credit created by Bank A is deposited in Bank B. Bank B must hold 20% and therefore has excess reserves of $272.00. The process may be repeated until the maximum expansion possible with the reserve of $340 and 20% required reserve is achieved.

Note: The process of expansion would also take place if the person to whom Bank A made the first loan then drew a check in favor of another person who deposited it to his account in the same bank. Bank A would then have $272 in excess reserves, etc.

D. The commercial banker's ability to lend depends therefore on its excess reserves. These reserves may arise from stockholders, from original deposits and from other sources where reserves may be acquired. We now turn to the Federal Reserve System and examine how it may influence the lending (including the creation of deposits) by commercial banks.

IV. The Federal Reserve System may be summarized in terms of (a) its organization and (b) its functions.

A. The organization of the Federal Reserve System is usually overemphasized. The main point is that the Federal Reserve Banks are owned by member banks but the Board of Governors is appointed by the President of the United States. Although privately owned, the Federal Reserve System operates as a public institution.

B. We wish to place major emphasis on the function of the Federal Reserve System, that is, its influence through monetary policies. We will focus on the relations of the Federal Reserve System to commercial banks.

1. We already know that a bank's capacity to lend depends upon the amount of its excess reserves and the reserve ratio against deposits which it is required to hold.

2. The Federal Reserve's influence over the lending of commercial banks, therefore, rests primarily on its ability to influence the commercial banks' reserves and reserve ratio. The variables

to be affected and the Federal Reserve's influence may be summarized as follows:

	Amt. of Commercial Bank Reserves	Reserve Ratio	Loans (including created deposits)
	$100	20%	$500

Federal Reserve Influence) Rediscounting — Changing Reserve Ratio

Federal Reserve Influence) Open Market Operations

3. Brief explanation, pointing primarily to the Federal Reserve's influence over the money supply by influencing the commercial bank's ability to lend. For more technical information, a textbook in economics should be consulted.

   a. Rediscounting: A member bank may take certain eligible instruments (I.O.U.'s received from businessmen, etc.) to the Federal Reserve System and the Federal Reserve will give the member bank an increase in its deposits at the Federal Reserve, thus increasing the member bank's reserves.

   b. Open-market operations: When the Federal Reserve System wants to increase the member bank's reserves, it will <u>buy</u> government bonds from individuals or banks. When the check of the Federal Reserve System clears, the member bank's deposits (reserves) are increased. The opposite effect is achieved when the Federal Reserve System <u>sells</u> government securities.

   c. Reserve ratio: The Federal Reserve System has the power to raise or lower reserve ratios <u>within a range</u>. The required ratios and range are reported in the <u>Federal Reserve Bulletin</u>. In our illustrations, we used 20% because it was easier to make computations. At present, the following ratios are required of member banks:

	Demand Deposits			Time Deposits		
	Max.	Min.	Present	Max.	Min.	Present
Reserve City Banks	22%	10%	16 1/2%	6%	3%	4%
Country Banks	14%	7%	12%	6%	3%	4%

V. Now, let us summarize briefly the relations of commercial banks, the Federal Reserve System, and fiscal policies in the money supply:

   A. Commercial banks have a range of choices in the quantity and direction of their lending. Their ability to lend may be influenced by monetary policies of the Federal Reserve System.

B. Monetary policies of the commercial banks and the Federal Reserve System influence the terms of credit (willingness to lend, interest rates, etc.). Such monetary policies affect the money supply. But fiscal policies of the Federal Government also affect the money supply, both in quantity and direction, since receipts and expenditures will affect the flow of money.

C. Monetary policies and fiscal policies may work together to stimulate the economy or restrain inflation. Monetary policies and fiscal policies may also be in conflict, e.g. fiscal policies may be directed towards stimulating economic growth, but if such stimulation causes prices to rise, monetary policies directed at the inflation could be in conflict with fiscal policies aimed at stimulating expansion.

THE FLOW OF GOODS AND SERVICES AND THE FLOW OF MONEY

Unit 13: Monetary and Fiscal Policies

Part II: Outline of Teaching Suggestions

I. Comments on the Content

A. Problems in teaching the concept

1. It was pointed out in the previous unit that familiarity with money could prove to be an obstacle in learning more about money. Likewise, banks are usually thought of gathering in and disbursing savings, but the more significant dimensions of affecting the quantity and direction of the flow of money are not usually appreciated.

2. The power of the commercial banks to create deposits when they make a loan is not generally known nor understood. In this unit, we have not had space nor time to treat the evolution of money, but it would help both teacher and student to know how money evolved. Perhaps, the two most important points are: (a) printed money, like deposits, have only a fractional reserve behind the total issue and (b) the power of commercial banks to create deposits is a descendant of the times and practices when commercial banks could issue their own printed money.

3. The notion of a flexible money supply is not one that people encounter in their personal contacts with the economy. Nor is it likely that they realize that an institution, particularly a private one, e.g. a commercial bank, could be entrusted with such power. Finally, the problem of who will be responsible for the money supply is surely not in the everyday experience of either adults or youngsters.

B. The concept as part of the unfolding structure

1. Scarcity: The discussion of scarcity has mainly dealt with the relation of wants to goods and services. In this unit, the discussion of the flexible money supply indicates that one may speak of the supply and demand for money and the role of commercial banks and the Federal Reserve System in relating the supply and demand for money.

2. Flows: In the discussion of the need for a flexible money supply, several major points relate the money supply and levels of output, price levels and inflation. All of these are elements in the flows.

3. Coordination: The need for a flexible money supply and the responsibilities of commercial banks and the Federal Reserve

System indicate the problem of coordination of monetary policies with the monetary needs of the economy.

4. Marginal analysis: Although bankers do not use the term "marginalism", their policies often rest upon percentage changes in their sources and uses of funds from one point in time to another. Such comparisons are really marginal analysis.

5. Institutions: It was pointed out earlier that customs and laws influence the operation of financial institutions. In this unit, the responsibilities for the money supply, entrusted to commercial bankers and further influenced by the Federal Reserve System, demonstrate how some institutions may be used to assign and influence the roles which other institutions play in the economy.

II. Comments on the Learning Process

A. Vocabulary: The notion of a creation of deposits is not a matter of vocabulary but an idea. Nonetheless, the notion of "creating" a deposit does employ the term "creation" in an unusual sense. One can also speak of "destroying" deposits when the bank allows the created deposit to be repaid and does not "create" another in its place.

B. Mathematical concepts and skills

1. The notion of a maximum expansion with a given reserve ratio and a given amount of reserves may be expressed as a formula:

$$\$340 = .20\ x$$

2. The process of expansion contains the notion of a series of connected computations. The concept of <u>process</u> often presents difficulties because most students have thought of mathematics as involving but one computation or manipulation.

3. The <u>general</u> formula for the expansion of deposits is the same as that for the multiplier. It is the sum of a geometric series:

$$\$340 + 0.8 \times \$340 + 0.8\ (0.8 \times \$340) \ldots\text{.etc.}$$

i.e.

$$1 + 4/5 \quad + \quad 4/5 \times 4/5 \quad \ldots\text{.etc.}$$

As a sum:

$$\frac{1}{1 - 4/5} = \frac{1}{1/5} = 5$$

The excess reserves in the formula for expansion of deposits are similar to the propensity to spend. The bank's required reserve resembles the propensity to save out of an increment of income. In this case, the resulting expansion is 5 times the original loan of $340, that is, $1,700.

4. Finally, the formula showing how the Federal Reserve System may influence the commercial bank's capacity to lend can be expressed as follows:

$$\frac{\text{Amount of Reserve}}{\text{Reserve Ratio}} = \text{Loans (including created deposits)}$$

The amount of reserves and reserve ratio are the independent variables which the Federal Reserve System may modify and the amount of loans is the dependent variable.

C. Ability to generalize

1. When a bank creates deposits, it is extending credit to the borrower. Although the arrangements are different, charging an item at the store really represents an extension of purchasing power to the buyer, as though the merchant had created the "money" with which the customer could buy. So the experience, probably not realized clearly, is present in the thinking of students and can serve as a basis for generalization about deposit creation.

2. Since the commercial banks have an area of judgment, influenced by the Federal Reserve System, this social arrangement of judgments influenced by others is already present in the thinking of the students. In a sense, the role of the Federal Reserve System with regard to the commercial bank is an illustration of a generalization about authority.

D. Background

1. Most students will have had some experience with banks and checks, but hardly with the experience of a created deposit.

2. It is likely that references have been made in history courses to the establishment of the national banking system and the Federal Reserve System.

III. Learning Situations

A. From Teacher to Teacher

This unit is an extension of the discussion of the role of money and financial institutions initiated in Unit 12. The first learning situation in Unit 12 illustrated the fact that societies may place their confidence in several forms of money simultaneously. For

example, in the United States we find coins, paper currency, and checks all functioning as money. Why this diversity? Because different forms of money perform different tasks more efficiently than other forms of money. The first situation described the types of money and in the second situation of Unit 12 we began our investigation of the movement of money within a society by looking at the idea of a bank as a social invention to facilitate the flow of money. The second illustration also emphasized society's need for a flexible money supply.

In this unit, the first learning situation illustrates through a play the process by which banks can create deposits. This situation also introduces the idea of a central banking system (The Federal Reserve System) which regulates the expansion and contraction of the money supply by private banks through establishing a rate of required reserves.

The full examination of the means available to the Federal Reserve System for regulating the money supply is illustrated in the second learning situation. The decisions of the Federal Reserve System to use its powers in one direction or another are also examined in this situation under the heading of monetary policy.

In the third situation, the students are introduced to the idea of government fiscal policy and it's influence on the money supply. Here the students are asked to examine the consequences of various combinations of monetary and fiscal policies under given conditions of disequilibrium in the economy.

In the course of the examination, the teacher may find opportunities to introduce implications of the previous concepts of the course into the examination of the student's recommendations. The examination may produce questions that go beyond the units covered and also into the implications of the student's recommendations for social and political considerations. The teacher should be listening carefully to the student comments as this extended discussion will provide him with information about the students' discovery of structure up to this point and about their ability to anticipate some of the remaining structure.

The following drawing summarizes the unfolding of concepts concerning money and financial institutions in Units 12 and 13.

1. Money as a social invention

↓

2. Functions of money and types of money

↓

3. Society's need for financial institutions (banks, etc.) to facilitate the flow of money

↓

4. Society's need for flexibility in the supply, velocity, and direction of money

↓

5. The ability of banks to expand and contract the supply, velocity, and direction of money

↓

6. Society's need for control of the flexibility in the supply, velocity, and direction of money

↓

7. The creation of a central banking system (The Federal Reserve Board in the United States)

↓

8. Regulation and control by a central banking system should be related to the goals of economic growth and stability in a society

B. Sequenced Learning Situations

1. First Situation: A Flexible Money Supply (Student Materials, page 639)

a. In the last unit we discussed the <u>need</u> for a flexible money supply. Then, we discovered that we <u>have</u> a flexible money supply, but how do we increase or decrease the amount of money? If we need an additional supply of money it must be created. In a series of scenes--each scene representing a different bank--we will see how the commercial bank creates money in the process of its daily business.

b. The following play is suggested as an introduction to the process of creating flexibility in the money supply. The teacher may use his desk to represent a commercial bank. He is the moderator. He makes the changes from Scene I--the first bank--to Scene II--the second bank--and so on. He will select six actors for the cast of Scene I, 3 actors for Scene II, and 3 actors for Scene III.

Changing the Supply of Money

SCENE I

CAST:

Mr. Monetary - the banker for the Federal Reserve Bank (known as the "Fed") who keeps the records for the "Fed" on the chalkboard.

Mr. Cashbaugh - the banker for the 1st National Bank, who is seated at the desk. He has a record book, a pad of notes, and 3 checkbooks.

Mr. Speed - the depositor, who has $10,000 in currency to deposit in the 1st National Bank, and deposit slips (original and duplicate).

Mike - the Brinks messenger, who stands near the desk of the commercial banker. He has several large envelopes, one of which is marked REQUIRED RESERVES.

Mr. Champp - the borrower (representing the Champion Sporting Goods Co.) who comes to the bank to borrow $8,000 in order to increase their stock of sporting goods for the coming football season. He is seated at the front of the room on the left side.

Mr. Tanner - the supplier of leather goods who receives the order, and later, the check for $8,000 from the Sporting Goods Co. The supplier is seated at the front of the room on the right side.

Seting: 1st National Bank

(The actors take their places for the first scene.)

Teacher: May I present Mr. Monetary (banker for the Federal Reserve Bank), Mr. Cashbaugh (banker for the 1st National Bank), and Mike, the Brinks messenger.

Mr. Speed: (takes checks, currency, and deposit slips to the banker at the 1st National Bank)

Good morning, Mr. Cashbaugh. Please deposit this to my account.

Mr. Cashbaugh: Hm! $10,000. You must have closed some good deals yesterday.

(The banker stamps the deposit slips and gives the duplicate to Mr. Speed)

Mr. Cashbaugh: Thank you.

(Mr. Speed returns to his seat)

Let's see, (he is filling out a form for the "Fed" and counting the checks and currency which he puts in an envelope marked "required reserves") 20% of $10,000 is $2,000. Mike! Deposit this $2,000 to the account of the 1st National Bank at the "Fed". It is for required reserves.

Mike: (putting the money and deposit slip in the large envelope marked REQUIRED RESERVES)

By the way, (pointing to the words on the envelope) what is "required" about this?

Mr. Cashbaugh: You see, Mike, there is a regulation that requires us to deposit 20% of all our demand deposits in the "Fed". You saw Mr. Speed deposit $10,000 to his account. I must deposit $2,000 in the "Fed"; it is the required reserve.

Mike: Yeh? Why?

Mr. Cashbaugh: For a couple of reasons--first, we know that it assures us that we can pay our depositors when they want to withdraw money. You know that all of them do not draw out all of their money at the same time, in other words, we have both deposits and withdrawals every day; but the most important reason is that it controls the flexibility of the money supply.

Mike: Just what does <u>that</u> mean? I've heard of "wooden nickels" and "rubber checks" but how can an honest banker change the money supply?

Mr. Cashbaugh: In this way: I'm sending that $2,000 to the "Fed" and keeping $8,000 out of the $10,000 which Mr. Speed deposited to his account--but, excuse me a minute.

(Mr. Champp of the Champion Sporting Goods Co. is approaching the desk.)

Good morning.

Mr. Champp: Good morning, Mr. Cashbaugh. I am Mr. Champp of the Champion Sporting Goods Co. These schools are "swamping me" with orders to be filled by September. My stock isn't large enough, and I surely don't want to lose the business. I need money for additional stock to be sure of filling all of the orders I expect to get.

Mr. Cashbaugh: Could you stagger your orders and collections in order to manage with $8,000?

Mr. Champp: Well, I'll do the best I can.

Mr. Cashbaugh: (He writes out a note for $8,000.)
Please sign this note, here.

(Mr. Champp signs the note.)
Thank you, and here is your checkbook.

(Mr. Cashbaugh records the demand deposit--a credit to the account of the Champion Sporting Goods Co.
Mr. Champp leaves the bank and goes to the desk of the supplier, Mr. Tanner.)

(Speaking to Mike) Now, why could I lend only $8,000 to Mr. Champp?

Mike: I suppose it was because I had the other $2,000--the reserve requirement that must be deposited in the "Fed".

Mr. Cashbaugh: Right!

Mike: But Mr. Champp didn't get his money!--his $8,000.

Mr. Cashbaugh: Not in currency, no, but in the form of a demand deposit. He won't pay for the goods until the order is filled, but he has to know that he can pay for it when the goods are delivered. This is the way we do it. (Opening the account books) We credit Mr. Champp's account for $8,000. Remember, I gave him a checkbook. When he pays for the sporting goods, he writes a check on this account. It is a kind of money, just as currency is money.

Mike: Can Mr. Speed still write checks on his account for $10,000?

Mr. Cashbaugh: Yes, Mr. Speed can write checks for $10,000, and Mr. Champp can write checks for $8,000.

Mike: That is just like having $8,000 more money in the money supply than we had 5 minutes ago.

Mr. Cashbaugh: That's exactly the point! We have increased the money supply. If you are really interested, why don't you ask Mr. (teacher) to keep a record on the chalkboard. Each time money is created he will write the name of the bank and the amount of money that is created.

Mike: Mr. (teacher) the 1st National Bank has just created $8,000.

(The teacher records the amount on the chalkboard.
Mr. Champp returns to his seat on the left side of the room, and Mr. Tanner completes the order form.)

Mr. Cashbaugh: Now, you better get over to the "Fed". We'll discuss the flexible money supply later.

(Mike takes the envelope to Mr. Monetary who credits the "Reserve Requirements" account with $2,000 and records the name of the bank. He stays with Mr. Monetary during the ramainder of the scene.)

Mr. Tanner: (Calling Mr. Champp on the phone) Your order amounts to $8,000, Mr. Champp. I understand that you would like delivery as soon as possible. The terms are payment on delivery.

Mr. Champp: Right!

Mr. Tanner: Thank you.

(Mr. Tanner delivers the goods to Mr. Champp.)

Mr. Champp: I have your check ready for you--$8,000.

Mr. Tanner: Thank you.

(Mr. Tanner returns to his seat on the right in the front of the room. He remains there for Scene II.)

END OF SCENE I

(Mr. Monetary, the banker for the Federal Reserve Bank, remains at the chalkboard. All others, except Mr. Tanner, return to their regular seats in the classroom. Mr. Tanner remains in his seat at the front of the room.)

SCENE II

CAST:

Mr. Monetary - the banker for the Federal Reserve Bank is held over from Scene I.
Mr. Tanner - the supplier in Scene I becomes the depositor in Scene II.
Mike - the Brinks messenger is held over from Scene I.
Mr. Checkman - the banker for the 2nd National Bank is seated at the desk.
Mr. Burger - the borrower (from The Hot Spot restaurant) comes to the bank to borrow $6,400 to remodel his restaurant. He is seated at the front of the room on the left side.
Mr. Nailer - the contractor, who gives the owner of the restaurant an es imate for remodeling,--receives the order and a check. He is seated at the front of the room on the right side.

Setting: 2nd National Bank

Teacher: May I present Mr. Checkman, the banker for the 2nd National Bank.

(The banker takes his place at the desk. Mike follows and stands behind the desk. The borrower, Mr. Burger, and the contractor, Mr. Nailer, take their places at the front of the room.)

Mr. Tanner: (taking the check for $8,000 and deposit slips to the bank)

Good morning, Mr. Checkman, please deposit this check to my account. These new consolidated schools are really good for my business.

Mr. Checkman: Thank you.

(He stamps the deposit slips and gives the duplicate to Mr. Tanner. Mr. Tanner returns to his regular seat in the classroom.)

Mike: (Leaning over Mr. Checkman's shoulder)

Are we going to create more money?

Mr. Checkman: Shh!

(Mr. Checkman is writing.)

Let's see. 20% of $8,000 is $1,600.

(He puts the deposit form and the money in an envelope, marked "required reserves" and gives it to Mike.)

Mike: (Already has his REQUIRED RESERVE envelope open)

Yes, I know. This $1,600 is the 20% reserve requirement which I will take to the "Fed" because it is a banking regulation. But, do you mind if I stay for a minute? Here comes someone.

(Enter the borrower, Mr. Burger, from The Hot Spot restaurant.)

Mr. Checkman: Good morning, Mr. Burger.

Mr. Burger: Good morning, Mr. Checkman. As you know, they built that new school near my restaurant. The chances are good that my business will really boom when school starts, especially during football and basketball season. I have an estimate from the contractor, Mr. Nailer, to remodel the west side for a "carry-out" section, but I will need to borrow $6,400.

Mr. Checkman: That is a good investment; I will be glad to arrange for the loan.

(Mr. Checkman prepares the note.)

Please sign this note for $6,400.

(Mr. Burger signs the note.)

Thank you. This is your checkbook. Good luck!

(Mr. Burger goes to Mr. Nailer's desk to discuss the contract.)

(Mr. Checkman records the demand deposit--a credit to the account of The Hot Spot restaurant. He leaves the book open.)

Mike: (While Mr. Checkman is recording the demand deposit, Mike is sketchily writing on the chalkboard.)

$$\begin{array}{r} \$8{,}000 \\ 1{,}600 \\ \hline \$6{,}400 \end{array}$$

Ah! You have loaned all of the cash on hand after giving me the required reserves. You have created $6,400! That shows that Mr. Burger can write checks for $6,400.

Mr. Checkman: Right!

(Moving the record book closer to Mike)

We call it a demand deposit.

Mike: Oh, yes, I understand. Well, good-by Mr. Checkman.

(Mike takes the required reserves to Mr. Monetary who credits the Reserve Requirements account with $1,600. Mike stays with Mr. Monetary while the contractor, Mr. Nailer, and Mr. Burger are discussing the contract.)

Mr. Checkman: Good-by.

Mr. Burger: (Looking at a trade magazine)

I agree with you. This looks like the best plan. When can you complete the job? I have arranged to borrow the money from the 2nd National Bank, and I will pay you upon completion of the job.

Mr. Nailer: I assure you that it will be completed in 30 days. Thank you for the contract.

(Mr. Burger returns to his seat in front of the room.)

(Mike returns to Mr. Checkman's desk.)

Mike: Mr. (teacher). We created $6,400 when Mr. Checkman loaned the money to Mr. Burger. Did you record it?

(The teacher records the $6,400 and identifies it by writing "2nd National Bank". He adds the demand deposits--$10,000, $8,000, and $6,400 while Mike watches.)

What do you know! Mr. Speed deposited $10,000 in checks and currency, and now we have demand deposits amounting to $24,400.

(Mr. Checkman tears a page off the calendar to indicate the passing of time.)

Mr. Burger: (Takes a check for $6,400 to Mr. Nailer)

You did a fine remodeling job. I have a check for you--$6,400.

Mr. Nailer: Thank you. Good-by.

(Mr. Burger returns to his regular seat in the classroom.)

END OF SCENE II

(Mr. Monetary remains at the chalkboard. All others, except Mr. Nailer, return to their regular seats. Mr. Nailer remains in his seat at the front of the room.)

SCENE III

CAST:

Mr. Monetary - the banker for the Federal Reserve Bank is held over from Scene II.
Mr. Nailer - the contractor, who becomes the depositor, remains at the front seat which he occupied in Scene II.
Mike - the Brinks messenger is held over from Scene II.
Mr. Loanaker - the banker for the 3rd National Bank is seated at the desk.
Mr. Eggbert - the borrower, who comes to the bank to borrow $5,120 for new cafeteria equipment for the school.
Mr. Cooke - the salesman for the Buckeye Fixture Company.

Setting: 3rd National Bank

Teacher: May I present Mr. Loanaker, the banker for the 3rd National Bank.

(The banker takes his place at the desk. Mike follows and stands behind the desk. Mr. Eggbert, the borrower, is seated at the front of the room on the left side, and Mr. Cooke, the salesman, is seated at the front of the room on the right side near Mr. Nailer.)

Mr. Nailer: (Takes the check for $6,400 and the deposit slips to the banker.)

Good morning, Mr. Loanaker. I want to deposit this check to my account.

Mr. Loanaker: (The banker stamps the deposit slips, gives the duplicate copy to Mr. Nailer, the depositor, and records the amount of the demand deposit - a credit to Mr. Nailer's account. Mr. Nailer returns to his own seat.)

20% of $6,400 is $1,280. That is $1,280 for required reserves and $5,120 cash on hand. Mike, this is a reserve deposit. Take it to the "Fed".

Mike: Yes, sir.

(Mike takes the required reserve to Mr. Monetary, who records the amount and name of the bank in the <u>required reserves</u> account.)

(Enter Mr. Eggbert. He goes to the desk of the 3rd National Bank.)

Mr. Loanaker: Good morning, Mr. Eggbert.

Mr. Eggbert: Good morning, Mr. Loanaker. You may recall that I applied for a loan for purchasing the new cafeteria equipment for the school. As you know, I was granted the contract.

Mr. Loanaker: Yes, sir. We can grant you a loan for $5,120. I have the papers ready for you. Please sign the note here (indicating the place to sign). This is your checkbook.

Mr. Eggbert: Thank you.

(The banker makes the entry to the account of Mr. Eggbert for $5,120. Mr. Eggbert goes to the desk of Mr. Cooke to look at equipment brochures.)

Mr. Eggbert: You may fill my order for the cafeteria equipment according to the specifications. I have arranged for a loan at the 3rd National Bank.

(Mr. Eggbert returns to his seat at the front of the room.)
(In the meantime, Mike returns to the desk of Mr. Loanakers)

Mike: Did you lend the $5,120? You know, I am really interested in this banking business. I am keeping a record of the money that is created.

Mr. Loanaker: Yes, I did.

Mike: (Turning to the chalkboard and, speaking deliberately, recalls the transaction and makes the computation.)

Mr. Nailer deposited a check for $6,400 and you sent $1,280 to the "Fed". That means that you created $5,120.

Mr. Loanaker: That is right, Mike. You have the idea, don't you.

Mike: (Addressing the teacher who is keeping the record at the chalkboard.)

We have increased the money supply again, Mr. (teacher). This time we added $5,120 to the money stream. How much additional amount of money altogether?

Mr. (teacher): (Adding on the chalkboard) $8,000 + $6,400, plus $5,120 = $19,520 has been created as a result of the $10,000 deposit by Mr. Speed.

Mike: Altogether, depositors can write checks for $29,520.

(Mr. Eggbert goes to Mr. Cooke's desk.)

Mr. Eggbert: (presenting the bill) I have completed the school cafeteria job and it has been inspected.

(Writing the check after looking at the bill) Yes, I know, - and it seems to be working fine. - $5,120. (Mr. Eggbert remains at Mr. Cooke's desk while he writes the check.)

Mike: Mr. Loanaker, when Mr. Cooke deposited that check in a bank, the bank can create more money by making another loan, can't it? (Mike turns to the chalkboard and writes.) 20% of $5,120 is $1,024. Then, I will take $1,024 to the "Fed" for the required reserves, and the bank can lend $4,096 to someone who can use it to improve his business. Really, it is money in the bank because he can write checks for that amount to pay for the project.

Mr. Loanaker: Yes, it is money.

Mike: What bothers me is that we are going to get an awful pile of money, someday. Where does it stop?

Teacher: Excuse me, may I interrupt. The class has observed this accumulation of money, too. How would you answer Mikes question?

Following is a series of questions which the teacher may use to focus the discussion of the changes in the supply of money as portrayed in the playlet skit, and to understand that control involves both increasing the money supply and contracting the money supply.

(1) What determines the amount of loans that the bank can make.

(2) How can the amount of available loans be changed?

(3) Under what conditions would the reserve requirement be changed? In each case what is the expected reaction of borrowers?

(4) Assuming each scene in the play to be an isolated situation, what effect does the payment of a note have on the amount of money in circulation - or, to use economic terminology, the money supply?

(5) What choices does the bank have when the note is paid? In each case, what is the effect on the money supply?

(6) With reference to the play, describe the school as it might have been if no loans had been made.

(7) How would you describe the effects of the loans on the economy of that particular locality? On the basis of the original deposit of $10,000 by Mr. Speed, what is the ratio between the deposit and the amount of loans available.

(8) Assuming that money loans are being made at the same time by different banks, which is the overall effect of these loans on the entrie economy?

The setting for a more thorough examination of the question is given in the second learning situation.

For reference, the chalkboard should show the following accounts:

Mr. Monetary's Account for The Federal Reserve Bank

Reserve Requirements

Assets	Liabilities	
	1st National Bank	$2,000
	2nd National Bank	$1,600
	3rd National Bank	$1,280

The teacher's record of money created:

	Money Created	Total
1st National Bank	$8,000	$8,000
2nd National Bank	$6,400	$14,400
3rd National Bank	$5,120	$19,520

2. Second Learning Situation: The Fed in Action (Student Materials, page 648)

   a. In the last situation you were introduced to the idea that banks could create money. Can banks create as much money as they want? Are there any limitations on the bank's power to create new money? We saw in the last learning situation that banks must keep a certain amount of their money in the Federal Reserve Bank. This then becomes a limitation on how much the banks can loan. The purpose of this situation is to show how the requirement set by the Fed can influence the money supply.

The Reserve Requirement

Steve Watkins has just started working at a gasoline station. He's making $25 a week and spending $15. Therefore, he had $10 cash each week which he was putting in a cigar box in his desk. Soon he had $100 in his box, and his dad suggested he put the money in a bank. Steve wanted to save the money towards buying a car, so he decided to put it in a checking account. This story will follow the process of what the bank may do with Steve's $100 deposit. Each of the banks involved in the story has an actual name such as First National Bank or Columbus Trust, but for simplicity we will refer to these as Bank I, Bank II, etc., to show that different banks are involved. We will also assume that banks must keep 20% of all of their deposits in the Federal Reserve Bank.

The $100 which Steve deposited in Bank I allows this bank to make loans up to $80. Why can only $80 be loaned and not $100? You should recall from the previous situation that Bank I had to place $20 in the Federal Reserve.

Marc Kneller has been saving his money to buy a motorcycle. Motorcycles are on sale right now, and he figures this is the best time to buy, but he is short $80 of the purchase price. Marc has a job in a super market and has kept his savings up to this time in Bank I. The bank is willing to loan him the necessary $80. He takes his cash and the bank's check for $80 to the Davidson Motorcycle Co. and buys the motorcycle. The Davidson Company deposits Marc's check in Bank II. Bank II then places 20% of the $80 ($16) in the Federal Reserve Bank, and now has $64 available for loans.

Mr. Crandall's wife was sick, and he needs $64 to pay the hospital. He is a regular depositor at Bank II, and he goes there to ask for a loan. Bank II has the amount Mr. Crandall needs and since he is a regular customer of the bank, they loan him $64 with which he pays the City General Hospital which, in turn, deposits the $64 in the bank. The bank now has additional money to loan as shown below.

The vast number of possible transactions can se shown through use of the following table. The dots (•••) used in the table signify an infinite number of transactions, all of which will total approximately the sum shown at the bottom of the table.

Deposits	Reserve Requirement	Loans
$100.00	$20.00	$80.00
80.00	16.00	64.00
64.00	12.80	51.20
51.20	10.24	40.96
40.96	8.20	32.76
32.76	6.55	26.21
26.21	5.24	20.97
20.97	4.19	16.78
16.78	3.36	13.42
13.42	2.68	10.74
.	.	.
.	.	.
.	.	.
$500.00	$100.00	$400.00

Questions to focus discussion:

(1) What is the relationship between the original deposit and the total money created by all the banks?

(2) What relationship does this have to the 20% Federal Reserve requirement?

(3) Given the Federal Reserve requirement and the amount of original deposit, what can you say about the amount of money created?

(4) What would happen if the Reserve requirement were changed to 25%? How much money would be created in this instance?

(5) What concept already studied seems similar to the above? (The teacher may wish to refer students to the illustration of the multiplier in Unit II, taking care to emphasize that while the mathematics is similar, the concept involves different economic factors.)

Financing a Ship

Jack was in the Hobby Shop admiring the new ship models which had just come in. Mr. Brewster, the owner, saw him looking at them and came over to talk

to him. "I see you in here a lot, Jack. You make a lot of models, don't you?"

"Yes, I have about ten already and want to start on another one. Now I just have to decide what I want," said Jack as he browsed around.

Suddenly Mr. Brewster said, "Jack, I just had an idea. I need some new models to put in the window. If you do a really good job with the next one you make, bring it to me and let me see it. If the model is good enough, I'll buy it back from you to put on display."

Jack was very excited about this. He would have the fun of making the model, plus the fact that he could make some money on it. "Mr. Brewster, that sounds like a great idea. How exactly would it work?"

"Well," answered Mr. Brewster, "you would buy the model which costs $5, and after you put it together you would bring it in for me to check. If I think it is good enough, I will buy it back from you for $7. Does that sound fair to you?"

"Fair!" yelled Jack. "I think it sounds great. I don't have enough money today, though, so I will have to come in tomorrow to buy it."

Mr. Brewster said he would be looking forward to seeing him the next day to buy the model and a little while later with the finished product. "Jack, I would like to change my display in a month, so you will have to have it done by then."

Jack was very excited as he left the Hobby Shop, but suddenly he calmed down. He didn't have any money and he didn't know where to get any. On his way home he ran into his best friend, Ted. "Hi," shouted Ted. "What's new?"

"I just got a reat offer from Mr. Brewster. Can I borrow five dollars?" Jack rattled.

Ted was confused. "Who is Mr. Brewster and why do you need $5? Explain slowly, please, so that I can figure it out."

Jack explained what had happened in the Hobby Shop and concluded, "So you see, I need $5 right away to buy that model. If you could loan it to me I would pay you back with interest."

Now Ted was the one who was excited. "You say you would pay interest, too? How much?"

Jack thought for a minute and then said "Fifty cents on five dollars. Will you take it or not?"

Ted then admitted he didn't have the money, either, although it sounded like a great idea. He said he would talk to his parents that night and see what they said about it. Maybe he could borrow it from them to loan to Jack.

The boys parted as Ted said "I'll let you know in the morning."

Now both boys had problems. They both wanted to borrow money, but Jack could borrow only if Ted could arrange it with his parents. Ted talked to his parents that night at supper and told them about the conversation he had had with Jack. They thought the loan was a good idea, but they weren't sure if Jack would be able to sell the model to the Hobby Shop. Ted said he had seen some of the models Jack had put together and that they were very good. Ted's parents finally concluded that Jack was a good risk and they would give Ted the money to loan to him. However, Ted's parents decided that they would need some sort of guarantee that the loan would be paid back. After some thought, Ted decided that since he didn't wear his watch much he would give it to his parents as a guarantee. They agreed to give the watch back to him when he repaid the loan they made.

The next day Ted gave the $5 to Jack. Jack bought the model and, after a lot of hard work, sold it to the Hobby Shop for $7. A month later Jack paid Ted $5.50 and Ted repaid his parents $5 and at the same time got his watch back.

Banks are involved in a similar process. For instance, the Ajax Widjit Company wanted to expand its facilities and came to the Smith Street Bank for a loan. Although the Smith Street Bank felt that Ajax Widjit was a good risk, they had no excess reserves with which to make a loan, so they applied to the Federal Reserve Bank. Since the Smith Street Bank's assets included the IOU of the Bouncy Bubble Bath Company, they borrowed on it (discounted it with the Federal Reserve Bank). The IOU was for $1,000 but the Fed would only loan them $970, although they would have to pay back $1,000. The $30 difference is known as a discount and is a type of interest payment. The Smith Street Bank took the $970 which the Fed loaned to them and loaned it to the Ajax Widjit Company at 5 per cent interest per year. Ajax Widjit made the expansion, and from the increased profit which this brought them they paid back the Smith Street Bank $970 plus 5 per cent interest or a total of $1,023.75 (principal + $48.75 interest). The Smith Street Bank then paid the Fed $1,000 as they had promised, and the Fed gave them back the IOU of the Bouncy Bubble Bath Company which they had discounted. This whole process is known as "rediscounting".

In this way the Federal Reserve Bank can influence the money supply by raising or lowering the discount rate. If the Fed feels the money supply is increasing too rapidly, they can raise the discount rate which will discourage banks from borrowing because they can no longer made a profit on a loan. If the banks are unwilling to borrow money from the Fed, they will not be able to make as many loans to consumers. Since some loans are always being repaid, the money supply is decreased if banks are not able to make more loans. On the other hand, if the Fed thinks the economy is entering a period of deflation and the money supply is decreasing, they can lower the discount rate which will allow banks to borrow more easily. This will increase the money supply by allowing the banks to create more demand deposits.

b. So far in this situation we have seen that the Fed can influence the money supply by setting the reserve requirement and the discount rate. Another important tool which the Fed may use is selling and buying government securities. These negotiable securities are bought and sold on the open market. For a more extended discussion of the open market, see Paul Samuelson, Economics: An Introductory Analysis (fifth edition), pp. 349-351 or McConnell, Economics: Principles, Problems, and Policies (second edition), pp. 326-328. The following materials are designed to help the students understand how the Fed uses open market operations to control and regulate the supply of money.

Open Market Operations

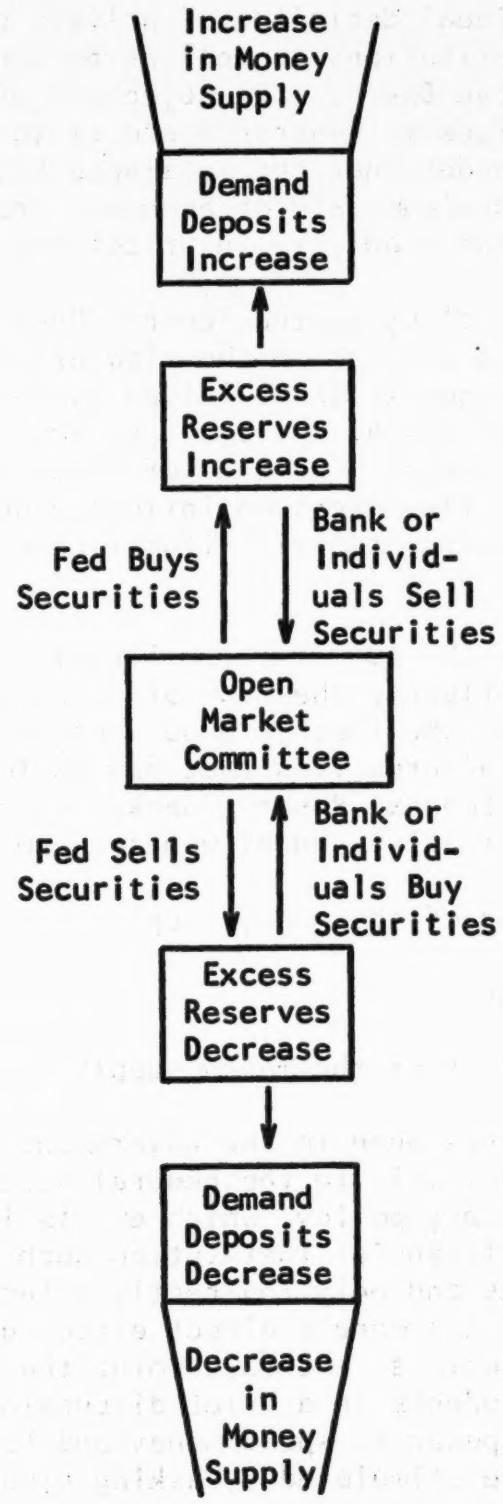
The Federal Reserve System consists of twelve district banks located throughout the country. The activities of these banks are coordinated through the Board of Governors which is a permanent committee appointed by the President of the United States. The Board of Governors and presidents of five of the district banks make up the Open Market Committee. The main task of this committee is to buy and sell government securities in order to influence the money supply.

Let us see how this might be done. Suppose for instance that there were indications that the nation was entering a period of inflation. At a meetint of the Open Market Committee a decision would be made to counteract this inflationary tendency. How might this be done besides the ways already suggested? The Open Market Committee would vote to sell government securities. This would contract the money supply because banks would use their excess reserves to buy these securities and thus have less money to loan to consumers. In other words, they are restricted in their ability to create money through demand deposits. This in turn cuts down on the ability of the consumer to spend and hopefully holds back the tendency towards inflation.

What action is the Open Market Committee likely to take if a deflationary tendency is noted? Why might commercial banks be willing to sell securities to the Fed?

Have the students diagram the actions of the Open Market Committee in increasing and decreasing the money supply. One way of doing this is given below. The students may come up with equally suitable representations of the Open Market Committee's actions. We are interested here in showing only general effects of a course of action. We have not attempted to trace the exact result of any specific action in measurable terms.

Two Alternative Courses of Action



3. Third Learning Situation: The Relationship Between Monetary and Fiscal Policies (Student Materials, page 652)

   a. Unit II presented the idea that industrially advanced nations usually are in a condition of imbalance between the flow of goods and services and the flow of money. Depending on the level of employment and other considerations, this imbalance may promote growth. On the other hand, the imbalance between the flows may under other conditions promote inflation

or recession. Units 12 and 13 thus far have illustrated that the flow of money in the United States is influenced by the individual decisions of private banks and other financial institutions as well as by the decisions of the Federal Reserve Board. The objective of the monetary policies of the Federal Reserve Board is to influence the flow of money in order that the imbalance between the flows will lead to the maximum rate of economic growth obtainable without sacrificing stability in prices and wages.

b. The monetary policy of the Federal Reserve Board is not the only influence exerted on the flow of money. Another important influence is that wielded by the federal government in the form of fiscal policy, i.e. the rates of government spending and taxing. Neither of these two policies operate in a vacuum. They exert an influence upon each other and upon the existing economic situation which in turn affects them.

c. To illustrate the way in which fiscal policy and monetary policy may influence the flow of money and economic growth and stability, the teacher should present to the students the possible alternatives that may be followed by the government and the Federal Reserve Bank. We have already seen that the alternatives under monetary policy may be:

(1) Expansion of the money supply

(2) No change

(3) Contraction of the money supply

The alternatives open to the government are quite different from those available to the Federal Reserve Board. In contrast to monetary policy, which exerts its main direct influence upon financial institution such as banks and insurance companies and only indirectly affects the consumer, fiscal policy has more a direct effect upon the business and private sectors. At this point the teacher may wish to engage the students in a brief discussion of the federal government's power to spend money and to tax. This discussion may be stimulated by asking students to respond to the following question:

What two principle financial powers does a government have? The main point of the discussion is for the students to recognize that taxation and spending are the two basic functions of governemtn financial activities and are classified as fiscal policy. When one studies the effects on taxation and spending no economic activity?

Just as there are three alternatives within monetary policy, there are also three alternatives within each area of fiscal

policy. In the area of government spending these are:

(1) Increase in the rate of government spending

(2) No change in the rate of government spending

(3) Decrease in the rate of government spending

And in the area of government taxation these are:

(1) Increase in the rate of taxation

(2) No change in the rate of taxation

(3) Decrease in the rate of taxation

Rather than presenting this information in a didactic manner, the teacher may wish to give the students an opportunity to arrive at this information through an examination of governmental financial powers. There may be a tendency for students to emphasize only the absolute amounts of change in receipts or expenditures instead of realizing that it is the comparative rates of change in each which is important for us to consider.

Hopefully, the foregoing discussion will give the students some basic tools which may be used in analyzing the effects of farious fiscal and monetary policies. (NOTE: The teacher should take every opportunity to introduce the terms "fiscal" and "monetary" policy into the discussion.)

Before analyzing the effects of fiscal and monetary policy, we must have some understanding of the conditions of disequilibrium existing in the economy at any given time. What are the conditions illustrated in Unit 11? Three conditions of disequilibrium may be identified if degree of employment is added.

(1) Value of output is greater than total demand.

(2) Value of output is less than total demand and:

  (a) Economy at less than full employment.

  (b) Economy at full employment.

The following outline summarizes the monetary and fiscal policies and the three conditions of disequilibrium. The monetary and fiscal policies are presented as possible alternative courses of action. The outline is a classification scheme, not a means for choosing the "correct" monetary and fiscal policies to meet the different disequilibrium conditions.

A Simplified Classification of Monetary and Fiscal Policies and Disequilibrium Condition

Disequilibrium Conditions

A. Value of output is greater than total demand.

B. Value of output is less than total demand and:

1. Economy at less than full employment.

2. Economy at full employment.

Monetary Policies

A. Expansion of the money supply

B. No change in the money supply

C. Contraction of the money supply

Fiscal Policies

Government Spending:

A. Increase in the rate of government spending

B. No change in the rate of government spending

C. Decrease in the rate of government spending

Taxation:

A. Increase in the rate of taxation

B. No change in the rate of taxation

C. Decrease in the rate of taxation

After the students have discussed the financial powers of the federal government, it may be beneficial to place the above diagram on the chalkboard as a summary. The preceding discussion and summary is a preparation for the main examination of the learning situation.

The main examination in which the students are to be engaged in is given in the following statement. Given a specific condition of disequilibrium (for example, insufficient supply with full employment) and a given set of monetary and fiscal policies (for example, contraction of the money supply, an increasing rate of government spending, and no change in the rate of taxation) what outcome would you expect in the economy as a consequence?

d. Below is an example of a possible condition and the policies that might be followed in attempting to reach equilibrium. We have provided for the teacher an analysis of the effects of these policies. This analysis offers some guide lines which may be used in presenting the material to the students.

(1) CONDITION: Insufficient supply disequilibrium with full employment

WHERE WOULD THIS LEAD IF THERE WERE NO MONETARY OR FISCAL POLICIES?

There would be no room for growth because resources are already fully employed. Since the inadequate supply could not meet the demand, consumers would compete for the available goods and services causing prices to rise. This would result in inflation and instability.

(2) MONETARY POLICY: Contraction of the money supply

WHAT WOULD BE THE RESULT OF FOLLOWING THIS POLICY?

Banks would not be able to create as much money which means that they could not loan to the business and private sectors. As the flow of money is diminished, in this way, the demand for goods and services is in turn reduced. This reduction in demand will tend to bring demand into equilibrium with supply.

(3) FISCAL POLICY---GOVERNMENT SPENDING: Increasing rate of government spending

WHAT WOULD BE THE RESULT OF FOLLOWING THIS POLICY?

An increasing rate of government spending would stimulate demand resulting in further disequilibrium of supply and demand. Depending upon the rate of increase of government spending, this will tend to cancel out the effects of the contraction of the flow of money brought about as a result of following the above monetary policy.

(4) FISCAL POLICY---TAXATION: No change in rate of taxation

WHAT WOULD BE THE RESULT OF FOLLOWING THIS POLICY?

A policy of no change in the rate of taxation will have no effect upon the condition other than that which it may already exert. In other words, if a policy of high taxation is already being followed, this will continue the policy of contraction. Conversely, if a policy of

low taxation is being followed, then an expansionary policy will be continued.

(5) GIVEN THE ABOVE CONDITION, WHAT WOULD BE THE PROBABLE OUTCOME OF FOLLOWING ALL OF THESE POLICIES?

Each of these policies will tend to affect the entire economy. Since we are unable to compute exactly the effects which these changes will have upon the economy, all that we can show is the general tendencies. Since the policies will tend to cancel each other, the economy will continue its disequilibrium, and thus the outcome of this combination of policies will tend to result in inflation.

Note: The above outline has been included in the student materials.

e. Following a discussion of the above example, the students should be directed to choose at random one monetary policy and one of each of the divisions of fiscal policy and write a description of what outcomes would follow from their set of policies if the disequilibrium condition of the economy was given as <u>insufficient supply with less than full employment</u>. A few students might then read their analyses to the class and defend their conclusions. The same assignment may then be repeated with the given condition of <u>insufficient demand</u>.

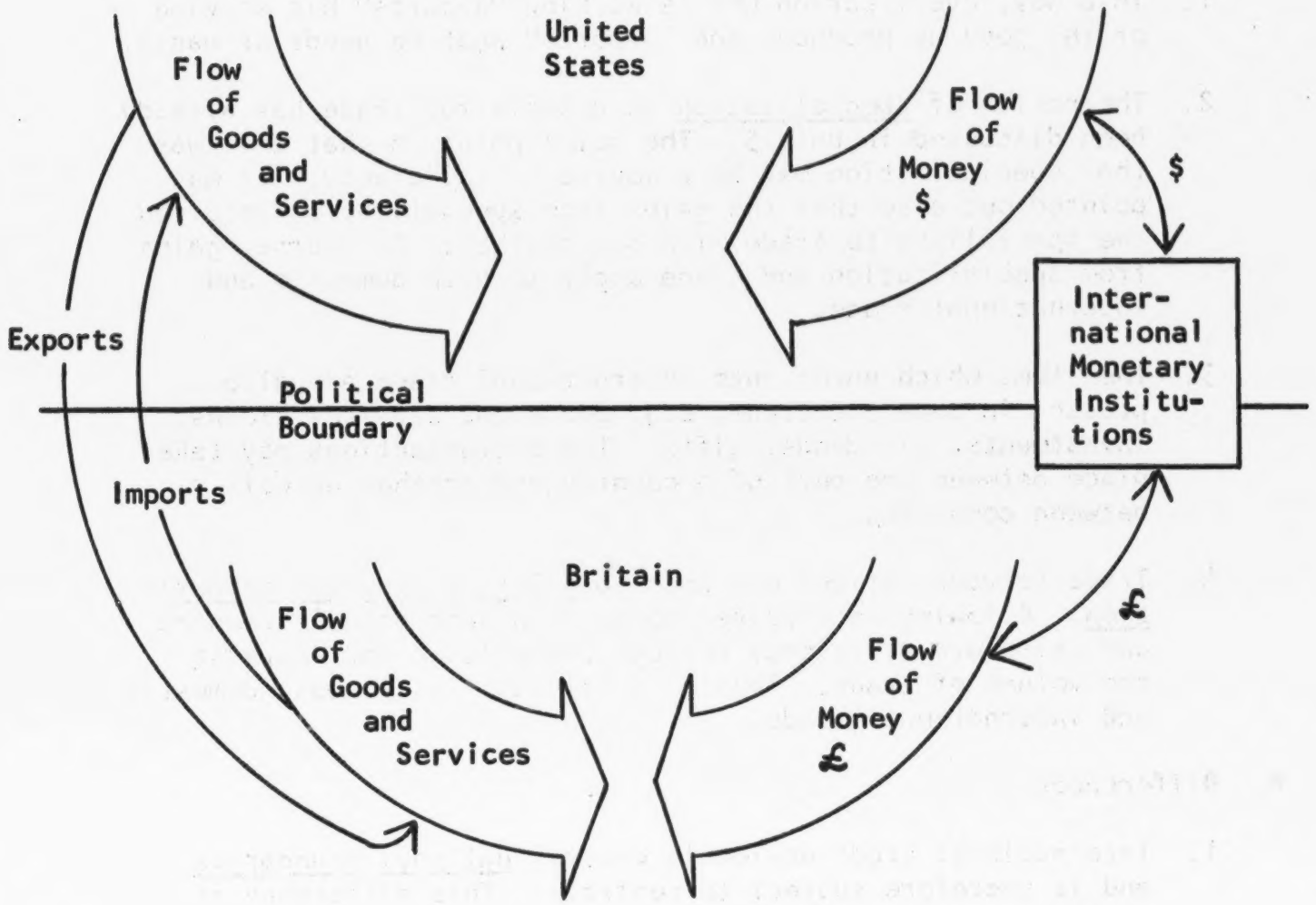
f. The discussion now turns to the question, "Given a specific condition of disequilibrium, what set of monetary and fiscal policies would you recommend?" In this discussion, the teacher should encourage one student to examine the consequences of his recommendations in depth. Other members of the class should also be encouraged to participate in this examination.

THE FLOW OF GOODS AND SERVICES AND THE FLOW OF MONEY

Unit 14: International Trade

Part I: Sequenced Outline

I. Units 7 through 13, on the flow of goods and services and the flow of money, have focused upon the internal or domestic flows, that is, within a country. However, goods and services are traded and payments are made between countries. International trade, then, should be considered an extension of the concept of flows, as indicated in the following diagram:



II. The study of international trade has many dimensions. We will make a choice and emphasize those dimensions which best fit the logic of this course. These are the starred items. The other items will be briefly described.

*A. Similarities and differences between domestic and international trade.

*B. The International Balance of Payments.

C. International monetary institutions for making payments.

D. Importance of exports and imports to the American economy.

*E. Foreign economic policies influencing the flow of goods, services, capital and people, e.g. tariffs, immigration laws, foreign aid, Common Market.

III. First let us consider the similarities and differences between domestic and international trade.

A. Similarities

1. In a way, every person who is working "exports" his service or the good he produces and "imports" what he needs or wants.

2. The notion of specialization as a basis for trade has already been discussed in Unit 5. The major point in that unit was that specialization may be a source of efficiency. It was pointed out also that the gains from specialization required the specialists to trade with one another. Of course, gains from specialization and trade apply to both domestic and international trade.

3. The items which enter into international trade are also present in domestic trade, e.g. goods and services, loans, investments, dividends, gifts. These transactions may take place between one part of a country and another as well as between countries.

4. Trade between nations may open up a larger area for competition. Allowing enterprises to sell in each other's country can stimulate efficiency through competition and increase the volume of trade. This principle applies to both domestic and international trade.

B. Differences

1. International trade obviously crosses national boundaries and is therefore subject to controls. This difference is one of degree, for within the U. S. one state may impose regulations which could influence the movement of goods and services. Such regulations may be unconstitutional (see, the Interstate Commerce clause) but are still enacted.

2. Because countries have different currencies, it is necessary to establish international monetary arrangements and institutions to facilitate payments, e.g. to convert dollars into pounds or pounds into dollars.

3. Since all of the foreign transactions may be totaled and looked at from the point of view of national interest, a national foreign economic policy must be established.

4. Difficulties arising from international payments may seriously affect international trade, e.g. a serious deficit in the balance of payments (discussed below) may cause a change in international trade and in foreign economic policies.

IV. Now let us examine how the International Balance of Payments helps us see international trade as a special case of flows. It is special, as we know, because it represents trade over national boundaries and between countries with different currencies.

A. Each of the items that enters into trade may be thought of as a sub-flow, a division comparable to the breakdown of the GNP into sub-flows.

B. We may also recognize another comparable bit of analysis. Recall, that the flow of goods and services valued in money was equal to the flow of money. Now, we will see that, by definition, all of the payments involved in international trade will be equal to all of the receipts. The International Balance of Payments, then, is a form of social accounting, summarizing the payments and receipts arising from international trade.

C. A simplified summary of the International Balance of Payments for 1964 is given here; current data may be obtained from the Statistical Abstract of the United States and from the June issue of the Survey of Current Business.

	Payments (Imports)	Receipts (Exports)
Merchandise	$18.6 Billion	$25.3 Billion
Transportation	2.5 "	2.3 "
Travel	2.2 "	1.1 "
Miscellaneous	0.9 "	2.1 "
Military Expenditures	2.8 "	0.8 "
Dividends	1.4 "	5.4 "
Gifts (net)	2.7 "	0.0 "
Investments	8.1 "	0.7 "
Statistical Discrepancy	1.2 "	0.0 "
	$40.4 Billion	$37.7 Billion

Deficit: $2.7 Billion

$0.17 Billion Gold

$2.5 Billion Deposits Gov't. Sec.

Explanations:

1. Military grants <u>are not included</u> under military expenditures.

2. Deficit of $2.7 billion accounted for by the outflow of gold of $0.17 billion and an increase of deposits and government securities held by foreigners of $2.5 billion.

3. The International Balance of Payments is often presented in different forms. Frequently the items are grouped into four divisions: Goods and Services, Unilateral Transfers (gifts), Capital Movements, and Deficit.

D. Note, the International Balance of Payments is always balanced. That is, total payments equal total receipts, since the deficit or surplus would balance the accounts.

E. The term "favorable Balance of Payments" is usually applied only to the excess of merchandise exports over merchandise imports. Some writers use the term to apply to the balance of goods and services exported over goods and services imported.

F. The International Balance of Payments may be used to show the relation of <u>total</u> or <u>aggregate payments</u> versus <u>total</u> or <u>aggregate receipts</u>. But one may also look at the composition of the flows, that is, at each of the items, to see the effects on the International Balance of Payments. The analysis of effects through an examination of the composition of the flow is similar to the approach to the GNP and the determination of a nation's income.

V. The monetary institutions and arrangements which make possible international payments are also part of international flows--the international flows of money. However, we indicated that we will not treat in detail this part of the flows problem. College texts usually describe the payment arrangements briefly or not at all. The reason for the brevity is that it requires so much time to describe adequately these unfamiliar institutions.

A. If two countries are on a gold standard, payments may be made either through gold or through foreign exchange.

Gold

Payment

Foreign Exchange

B. Payments are rarely made by the shipment of gold; mainly through foreign exchange.

C. Briefly foreign exchange means buying and selling claims on another country's currency. For example, the receipts from Britain build up the amount of pounds owned by Americans. Those who own these <u>claims</u> can sell them to those who need to make

payments in pounds. A bank usually buys the claims on pounds (e.g. in the form of a commercial bill) and sells the pounds (in the form of a banker's bill or a cable).

D. This brief summary is provided only for the teacher's orientation, not as background for materials for the students.

VI. The importance of exports and imports to an economy may be demonstrated in three ways, each of which requires further careful analysis.

A. Exports and imports as a percentage of the Gross National Product In the U. S. exports and imports each approximate about 5% of the GNP, but this figure understates the importance of international trade. Agriculture and many industries depend upon essential imports (coffee, manganese, aluminum ore) and upon their export trade (cotton, grains, molybdenum, construction and mining machinery).

See Statistical Abstract of the United States for:
Exports of U. S. Merchandise, by Commodity Groups.
Imports of Merchandise, by Commodity Groups.
Domestic Exports in Relation to Domestic Output, Selected Commodity Groups.
Imports for Consumption in Relation to Domestic Output, Selected Commodity Groups.

B. Jobs depend upon exports and imports. It is estimated that in 1960 exports accounted for 3 million, imports for 1 million.

C. Since a country is involved both politically and economically with other countries, international trade must be thought of as inseparably related to political relationships.

VII. Foreign economic policies may influence the flow of goods and services and the flow of money.

A. The flow of goods and services may be influenced by tariffs, immigration laws, and by agreements restricting or liberalizing trade relationships.

1. Reciprocal Trade Program.

2. The U. S. Trade Expansion Act of 1962.

3. Immigration laws affecting the movement of people.

4. The European Economic Community (Common Market).

B. The flow of money must be influenced by international monetary arrangement and institutions.

1. International Monetary Fund.

2. International Bank for Reconstruction and Development (World Bank).

C. Foreign aid to developing countries.

1. U. S. Technical Assistance.

2. U. N. Technical Assistance.

3. Aid by other countries.

VIII. Relation to other disciplines (illustrations)

A. Geography: The relation of international trade to geography seems obvious, for different territorial resources invite specialization and trade. Less apparent is the fact that nations need not be so specialized--some are heavily endowed and others are not.

B. Sociology: Trade is often a means through which inter-cultural influences may occur. Particularly significant is the migration of people.

C. Political Science: The political definition of a nation or a region is often the result of historical developments and may often interfere with the economies of trade. To overcome this obstacle, nations may establish a kind of super-state for trade, e.g. the Common Market.

D. Psychology: Specialization and trade imply mutual dependence and the need for cooperation. Such awareness can have a major influence on the attitudes and behavior patterns of the people involved.

THE FLOW OF GOODS AND SERVICES AND THE FLOW OF MONEY

Unit 14: International Trade

Part II: Outline of Teaching Suggestions

I. Comments on the Content

A. Problems in teaching the concept

1. In most of the units in this section on flows, a major difficulty is the unfamiliarity with the concepts and practices. Perhaps none is less familiar than those related specially to international trade. Yet, as we have seen, the basic ideas underlying international trade--specialization, etc.--are quite familiar.

2. In addition to the problem of unfamiliarity, one faces the obstacle of traditional attitudes towards international trade, many of them accompanied by emotions--e.g. a general fear of the foreigner, the notion that it is good to export but evil to import, that foreign wages are lower than ours and hence they will always be able to outsell us, etc.

3. You will observe, in Part I, that we could not discuss in detail all of the content of the notion of international trade and even those which were discussed could only be summarized briefly. In other words, many of the notions in international trade do require a full explanation in order to result in a feeling of confidence. Yet we have covered those points which emphasize the relation of international trade to the basic concept of flows.

B. The concept as part of the unfolding structure

1. Scarcity: Although international trade has been presented with emphasis on the international flows, nonetheless the specialization between countries is an example of a possibly better use of scarce resources.

2. Flows: The flow of goods and services and the flow of money over national boundaries extends the flow notion from a domestic to an international frame of reference. Of course, domestic money does not flow or move over national boundaries but international monetary institutions do facilitate the exchange.

3. Coordination: The international monetary arrangements and institutions do provide the basic devices for coordinating the international flows.

4. Marginal analysis: The international balance of payments is greatly influenced by percentage changes in each of the items and the offsets of other items in the balance. These do represent marginal shifts.

5. Institutional factors: The international arrangements for making and receiving payments are, of course, economic institutions. Likewise, tariff regulations, immigration laws, etc., affecting the trade of goods and services and the movement of capital and people, are examples of institutions.

II. Comments on the Learning Process

A. Vocabulary: The words "export" and "import" are used uncertainly by many people. They often say "export <u>from</u> and export <u>to</u>" a country. Note also that the words exports and imports are associated with goods only, but they also are used to include other items--travel, transportation, dividends--and may be a synonym for <u>all</u> receipts; similarly, for the word imports.

B. Mathematical concepts and skills

1. The concept of similarities and differences, used in the comparison and contrasts of domestic and international trade, shows that these are not completely similar nor different. In a word, we have overlapping in which some of the characteristics are similar and some different. One could draw an analogy to an intersection in set theory.

2. The International Balance of Payments is an example of double entry in accounting. Receipts (exports or credits) are balanced by payments (imports or debits). It is assumed, therefore, that the International Balance of Payments will always be balanced.

3. In determining the significance of international trade to the American economy, it was pointed out that the percentages <u>understate</u> the importance. The mathematical concept buried in this notion is that small percentages may have large influences. A similar demonstration of the importance of small changes is the influence which the outflow of a small amount of gold might have.

C. Ability to generalize

1. International trade is a special case of flows. If the student is able to see that it is, he has in fact generalized from a domestic flow to a more comprehensive appreciation of flows.

2. While this unit did not treat at length the ways of making international payments, the student has already had enough introduction to the problems of payments to appreciate the special nature of international payments.

D. Background

1. The notion of imports and exports has been present in many sections of history and in personal experiences of items imported from other countries.

2. Even though pre-judgments and fixed attitudes about imports and exports and the mainly invalid arguments for protection exist in the student's mind, their presence can be used to modify such positions and correct the arguments offered.

III. Learning Situations

A. From Teacher to Teacher

The two preceding units on money and financial institutions expanded the concept of flows by illustrating the role played by these institutions in providing a medium in which the flow of economic activity operates. Before we move to a study of the ways in which nations coordinate their economic activities, one major extension of the flows concept remains to be unfolded. The basic idea that is unfolded in all the units in the flows section is the continuous movement of goods and services in exchange for a continuous movement of money. This movement may be studied in terms of a few individuals, within a town, between towns, within a state, between states, within a nation, or between nations. In general, the preceding units analyzed the flows within a nation; in this unit the emphasis will be on flows between nations. Much of the previous analysis can be extended directly into this larger domain but the fact that the flows are now crossing national political boundaries does create some special analytical tools.

The first situation in this unit provides a setting for the exploration of the ideas involved in the terms exports and imports. If we define exports as all the flows out of a country and imports as all the flows into a country, then to avoid confusion, we will need other terms to describe just the tangible merchandise that flows in and out of a country. Instead we have chosen to hold at first to the common definition of exports and imports as terms which describe tangible merchandise. The expansion of these familiar terms into the ideas of visible and invisible exports and imports, however, paves the way for the receipts and payments terminology used in the balance of payments concept.

The balance of payments structure illustrated in the second situation is a device for analyzing the special case of flows

between nations. We have again chosen to illustrate the application of this concept to the U. S. situation because the current U. S. balance of payments problem offers an opportunity to study many facets of the balance of payments concept.

Our previous study of the concept of Gross National Product involved an analysis of both the size and the composition of the GNP. In the same way, this study of international trade is interested in both the size and the composition of trade between nations. The second situation provided an illustration of a device for making a quantitative analysis of international trade, i.e. it dealt with the size or magnitude of the flows between nations. The third situation shows the relevance of examining the composition of the international flows, i.e. a qualitative analysis.

B. Sequenced Learning Situations

1. First Situation: An Expanded Conception of Exports and Imports (Student Materials, page 653)

a. Essential to a full grasp of the idea of international trade is an understanding of the terms "export" and "import". It is likely that students will tend to define exports and imports in terms of goods sold to or bought from other nations by the United States. The purpose of this situation is to expand the definitions so that they will include items not usually viewed as exports or imports.

b. This situation may be introduced by asking students to define the terms by giving examples of exports and imports. As these are listed on the chalkboard there is a likelihood that the vast majority of the items suggested will be goods such as machinery, fruit, cloth, etc.

To initiate a discussion of "invisible" exports and imports the teacher may ask students:

(1) Within the U. S., are material goods the only "goods" that are bought and sold? Explain.

(2) What does the flow diagram used in past units represent?

(3) What items apart from material goods may be considered a part of the flow between the U. S. and other nations?

If students are able to come up with ideas touching on such items as transportation service, tourist expenditures,

military aid, gifts and investments, dividends, then they are already aware of invisible exports and imports. However, it may be necessary for the teacher to aid them by presenting some of the following situations and asking them to identify the exports and imports involved in each instance:

1. A U. S. firm dealing in the sale of manufactured goods to Brazil hired a Dutch merchant ship to carry the goods from a U. S. port to Rio de Janeiro at a cost of $10,000.

2. A Brazilian coffee company hired a U. S. cargo ship for $15,000 to carry a ship load of coffee beans to Australia.

3. Mr. and Mrs. Mason spent their vacation in Europe. During the two-month vacation they spent a total of $2,500. Of this, $1,400 was used to purchase tickets on an American airline and the remaining $1,100 was used on European rented cars, hotels, theaters, and souvenirs. At the last minute they cancelled their return by air and used the refund of $600 to buy tourist passage on a German liner.

4. On the same ship as the Masons was a French historian who planned to spend a year in the U. S. studying American views of the French Revolution. During his time in the U. S. this historian spent an allowance from the University of Paris of 1,500 francs ($306) per month.

5. British government scientists developed a weather satellite but lacked facilities for launching it. They made arrangements to use a U. S. launching pad and a rocket, paying the U. S. government $150,000 for the launching facilities and technical assistance and $100,000 for the rocket.

6. In some areas of the world where no U. S. troops are stationed our national interests are safeguarded by troops of such nations as Greece and Turkey. These nations are supplied with U. S. armaments as part of our military aid program. In 1963 the nations of the Near East (including Turkey and Greece) and South Asia received $424 million worth of such aid.

7. Jacob Eriksen came to the U. S. from Norway as a young boy in 1914. After a lifetime of work as a carpenter he retired and he and his wife decided to return to Norway. There they lived on the $175 check which they received each month from the Social Security Administration in Washington, D. C.

8. John Graham of Connecticut received a letter one day from a New Zealand lawyer informing him that his uncle had died and John, as his only heir, would be the recipient of 5,000 pounds. Half of this was in the form of shares in the Standard Oil Company of California and the remainder in New Zealand pounds.

9. Joan Schultz, a U. S. resident, bought $10,000 worth of shares in the British firm of Imperial Chemical Industries and received a yearly dividend check of 180 pounds ($496) as a result of her investment.

10. A Swiss dairy products company recently opened a branch of the company in West Virginia and specialized in a popular brand of Swiss cheese for the American market. In 1964 the U. S. manager sent a bank draft for $25,000 to the headquarters in Berne for distribution to European shareholders.

2. Second Situation: The Balance of Payments (Student Materials, page 653)

a. In the first situation we temporarily expanded the ideas of exports and imports to include all flows of money or goods and services between nations. These "visible" (merchandise) and "invisible" (transport, tourist spending, gifts, etc.) exports and imports may be totalled for a given year. Now, the problem is how shall we interpret these totals. The first step in the second situation is to develop some new terminology that will facilitate our interpretation of such totals.

b. If we return to the commonplace definitions of exports and imports, that is, exports are merchandise (visible goods) that flow out from a nation and imports are merchandise (visible goods) that flow into a country, then we need a new set of terms to cover all the "invisible" outflows and inflows as well as the "visible" outflows and inflows. In short, if the terms exports and imports are given specific meaning in reference to visible goods, then we need general terms to refer to all outflows and all inflows for a nation. The general terms currently used in economics for these ideas are <u>receipts</u> and <u>payments</u>. The reading selection suggested below illustrates the use of these terms and expands the ideas discussed in the first situation. Have the students read the following account of the U. S. situation as an introduction to the balance of payments problem.

The Balance of Payments[1]

Take a jigsaw puzzle and dump it out of its box. You will see a confused jumble of color and contour.

Then begin fitting the puzzle together, piece by piece. By the end of an evening you should have before you a picture as clear as a trout stream in the Poconos or Mt. McKinley on a crisp autumn afternoon.

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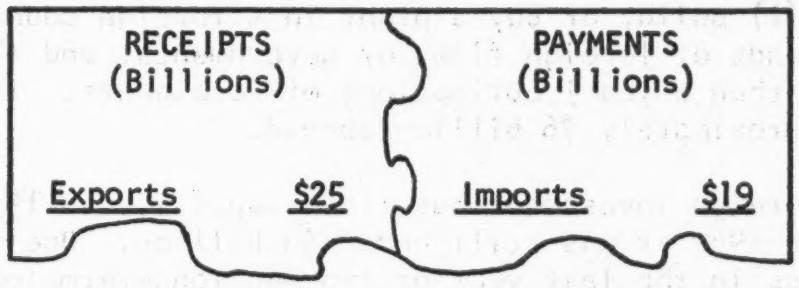
[1]"The Balance of Payments." Federal Reserve Bank of Philadelphia, Series for Economic Education.

One reason so many people have difficulty understanding the balance of payments is because they see it as a jumble of unconnected parts. Maybe the way to present the picture most clearly is to assemble the pieces, one by one.

For the sake of simplicity let's think of all the nations that the United States does business with as one country. We'll call it "Residuum", and we'll assume that only one currency, the dollar, is involved.

The United States buys (imports) goods from Residuum and sends dollars in settlement. The United States also sells (exports) goods to Residuum and receives dollars back in payment.

These money flows are the first pieces in the picture. In 1964 the United States bought, or imported about $19 billion worth of goods from Residuum and we sold, or exported about $25 billion. As a result of these transactions, the first pieces of our balance of payments looked like this--



In other words, we had a favorable balance of $6 billion on trade alone. Although specific products may have trouble, American goods, in general, obviously are able to compete very well with those produced in other countries.

It is true that we imported more crude, or raw materials than we exported and the same applies to manufactured foodstuffs. But when you come to other manufactured goods such as industrial machinery, computers, electrical apparatus and so on, our exports, at $15 billion, are more than twice as large as our imports.

If only goods were included in the balance of payments, we would have no problems. These are other pieces in the picture, however.

Every June hundreds of thousands of American tourists pack up their best clothes, get their shots and travel to Residuum. Together with businessmen and government officials they spent, in 1964, about $6 billion for transportation abroad, accommodations and other services.

People from Residuum spend about $5 billion for similar services in the United States and so we add the following pieces to the picture:

RECEIPTS (Billions)		PAYMENTS (Billions)	
Exports	$25	Imports	$19
Transportation, tourist services, etc.	5	Transportation, tourist services, etc.	6

Several important areas of Residuum are enjoying unprecedented prosperity. Business is booming there and Americans are finding opportunities to invest their money and make a good profit. There are three main ways to invest abroad: (1) build, or buy a plant in a foreign country; (2) buy the stocks and bonds of foreign firms or governments; and (3) buy the short-term (less than a year) obligations of foreigners. In 1964, Americans invested approximately $6 billion abroad.

Our net annual foreign investment has risen rapidly. In 1950 it was only $1 billion and in 1960 it was still under $4 billion. One of the fastest growing categories in the last year or two was long-term loans made abroad by American banks.

Our foreign investments, if wisely made, will yield interest and dividends. In 1964, the net income on our accumulated foreign investments was about $5 billion. Thus the picture now looks like this:

RECEIPTS (Billions)		PAYMENTS (Billions)	
Exports	$25	Imports	$19
Transportation, tourist services, etc.	5	Transportation, tourist services, etc.	6
Income on foreign investment	5	Investment abroad	6

Next, the many activities of the U. S. Government abroad must be considered. Washington spends about $3 billion to maintain American Armed Forces in foreign countries. Then we grant certain nations about $4 billion under the foreign aid program. Our government also makes loans and investments abroad, largely in underdeveloped areas and they are included here.

RECEIPTS (Billions)		PAYMENTS (Billions)	
Exports	$25	Imports	$19
Transportation, tourist services, etc.	5	Transportation, tourist services, etc.	6
Income on foreign investment	5	Investment abroad	6
		Military expenditures	3
		U. S. Government grants and aid	4

Add the "Other" or miscellaneous categories, total the receipts and payments, subtract one from the other to determine if there is a deficit, or a surplus, and the balance of payments picture for 1964 is now complete. (See next page.)

RECEIPTS (Billions)		PAYMENTS (Billions)	
Exports	$25	Imports	$19
Transportation, tourist services, etc.	5	Transportation, tourist services, etc.	6
Income on foreign investment	5	Investment abroad	6
		Military expenditures	3
		U. S. Government grants and aid	4
Other	2	Other	3
	$37		$40
Deficit	$ 3		

So you see the hefty margin of American exports over imports was more than wiped out by Government grants, military outlays, tourist spending and, most recently, by a surge of American investment abroad. After all parts have been fitted in place we paid out about $3 billion more to Residuum than we received.

In essence, then, our balance of payments simply is a record of all monetary receipts from, and payments to, the rest of the world.

Why we worry

The United States has had an unfavorable balance for 14 out of the last 15 years. Because of the excess of our payments over receipts during this period, foreigners now own huge quantities of U. S. dollars. Essentially, foreigners can do three things with these dollars:

Keep them in banks,
Invest them in U. S. securities,
Exchange them for gold.[2]

Since 1958, foreigners have converted over seven billion dollars to gold. Continuing balance of payments deficits and gold losses have led some to doubt the soundness of the United States dollar.

Although the real value of the dollar depends on its purchasing power and the strength of the American economy, many nations interpret payments deficits and gold losses as signs of potential weakness. The state of our currency is of vital importance abroad. Numerous countries use dollars as a backing for their own money. They feel that dollars are the next best thing to gold because they easily can be converted into gold and, in turn, to other currencies, at a fixed price.

In addition, foreigners use U. S. dollars to settle many business transactions, not only with the United States, but among themselves. Actually the dollar is sort of an international currency in business all over the world.

If other countries lose confidence in the stability of the dollar, undoubtedly they also will lose confidence in the United States and its political policies. Nobody wants to follow a weak leader.

As William McC. Martin, Jr., Chairman of the Federal Reserve Board, said, ". . . if the financial standing of the United States declines, the power and influence this country wields in the world's affairs . . . inevitably will decline as well."

There is no question that we must keep the dollar strong both in terms of purchasing power at home and in terms of gold abroad. So many free nations depend on it. But how do we do it? One way is to get our receipts from, and payments to Residuum in balance and keep them that way.

c. This part of the second situation takes the form of a conversation between four men who ride to and from work together. The teacher may have students read "Freeway Forum" (Student Materials, page 658) individually or may have five class members act the situation out in front of the class using a table and four chairs as "props". Some adaptation to particular class situations may be necessary, e.g. the teacher may wish to use girls in some of the parts. Following the dialogue are some suggested ways of helping students analyze and discuss the problems involved in the balance of payments controversy.

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[2]For a more detailed discussion, see the earlier pamphlet in this series entitled "GOLD!"

Freeway Forum

Narrator: As Ed Rolfe's car sped along the freeway leading out of San Francisco, Ed and his three friends listened to a broadcast concerning U. S. overseas trade. The commentator had just finished his broadcast by saying that in 14 out of the last 15 years the U. S. had spent more in foreign countries than it received from them. At this point Ed learned over, turned off the radio and the following conversation got under way:

Ed: Did you hear what he just said? That guy said that for 14 out of the last 15 years we've been shelling out more than we're taking in. Those idiots in Washington--how long do they think we can keep this up?

Bill: Listen to the genius here. I suppose you've got a solution to the problem.

Ed: Sure--it's simple. We're paying out more than we're taking in--<u>right</u>! Well, if we stopped buying all that French perfume, and all those German cars and Japanese cameras and all the rest of that foreign stuff, we'd get rid of the problems in a hurry.

Steve: I'm with you. American products are better anyway. People don't realize that every time they buy a foreign product some American is cheated out of work.

Herb: Wait a minute. Do you think it's okay for us to sell our products to foreign countries?

Ed: Sure, why not?

Herb: So you're saying we should sell as much as we can to other countries but buy as little as possible from them. How are they going to get the money to buy our stuff if we don't buy anything from them?

Ed: I don't understand what you're driving at, but I still think we ought to cut down on all this imported stuff.

Bill: You drink an awful lot of coffee, Ed; and how about all the chrome on your car, and bananas and . . . .

Ed: Come on, that's different. I'm not talking about those things. I mean the kind of things we can produce right here shouldn't be brought in from outside.

Bill: But the guy on the radio said that we are already selling a lot more things than we are buying. You guys aren't talking about the real problem. If we stopped giving away all that money in foreign aid, we wouldn't be on the short end year after year.

Steve: I still agree with Ed, but what you say seems to make a lot of sense, too. While I was cutting this man's hair the other day, he said last year we gave away almost three billion dollars.

Herb: According to some figures I read, that's about the same amount that we spend on military aid, too.

Bill: Well, I can see spending money on defense but not on these give-away schemes. We give all this money away to foreigners and get nothing out of it--that's what I object to.

Herb: I even question some of the money we're pouring into foreign armies. Are we getting our money's worth? And the money we're spending on our own soldiers' wives and families over there--that's another big chunk of money pouring out of the U.S.A.

Ed: You didn't complain about the fancy expense account your company allowed you when they sent you to Japan last year, Herb. How many good American dollars did you spend over there?

Herb: That's different. I was on an important job helping my company establish a new chemical processing plant.

Steve: How come your company spent all that money in Japan instead of setting up a new plant here? We ought to put a stop to that sort of thing.

Herb: By putting the plant in Japan we were able to cut production costs. I noticed that the clothing store you work in, Ed, sells suits made with our fibers. In fact, the suit you have on looks like it was made with them. Did you complain about getting a first-rate suit at a bargain price?

Ed: Stop changing the subject. Sure, I buy the best suit I can get for my money, but before you fellows started setting up plants all over the world the best buy was a 100% American made suit.

Herb: <u>What</u>? And you're the guy that's always saying that free competition is what has made America great. Are you afraid of some real competition?

Steve: Competition between American companies is one thing, but trying to compete with countries that pay lousy wages is something else.

Bill: I heard that the wages in Europe and Japan aren't so bad anymore. The real reason they can undersell us is that we built all those modern factories for them while our own factories are still using outdated machinery.

Steve: Turn the radio on. I want to hear the weather report.

Narrator: The conversation turned to the weather and the balance-of-payments problem was lost in speculation about the influence of atomic testing on the rainfall.

d. Have the students write a few sentences summarizing the solution of the balance of payments problem put forward by each of the four characters. The following are examples of the kind of responses that may be made by students:

(1) Ed thinks that we should cut back on imports and increase exports. He also seems to be against tourists spending a lot of money abroad.

(2) Bill is in favor of a great reduction in foreign aid spending.

(3) Steve thinks that we should prohibit Americans from investing abroad.

(4) Herb questions the efficiency of our military spending in foreign countries.

e. In the play, some of the characters contradict themselves when their self interests conflict with the national interest. Have the students find a few examples of these contradictions. They may point out that:

(1) Ed starts out calling for a cutback on all imports until Bill points out how many imported things Ed buys all the time.

(2) Herb wants to cut down on spending by American soldiers and their families in foreign countries, but he does not understand that the money he spent as a tourist also contributed to the balance of payments problem.

f. The following excerpt from the Federal Reserve booklet, "The Balance of Payments," gives an excellent statement of the conflicts that exist between various economic and political goals held by Americans. Although the context of the conflicts may vary from one nation to another, the case of the United States provides a general model of the kinds of conflicts which exist in most nations. Have the students read the following excerpt as a class or a homework assignment (Student Materials, page 661):

Solving the Payments Problem[3]

During recent years, the Federal Government took a number of steps designed to bring flows of dollars into, and out of, the United States in closer balance. The payments deficit, however, did not diminish significantly.

In February, 1965, President Johnson announced a comprehensive program, which prescribed corrective measures in most major categories of our international receipts and payments. The President concluded that the complex causes of our imbalance--ranging from world-wide turmoil to Mrs. Brown's desire for Lowestoft china--called for diversified action on many fronts.

More exports?

It would be desirable to increase American exports so that more money would flow into this country in payment for our goods. Indeed, the government already has several programs designed to increase U. S. exports by providing more information and services to U. S. firms wishing to sell abroad. In addition, we conduct 50 full-scale trade shows to exhibit U. S. goods overseas. More special financing and insurance arrangements are also in the works.

As in most balance of payments categories, beneficial actions seem to have offsetting reactions. Foreign trade is a reciprocal thing; if we convince foreigners to buy more here they also will want to sell more here. And, of course, an increase in our sales abroad will add to U. S. prosperity and income flows, which, in turn, will make Americans willing and able to buy more imports.

If we should pass a law to limit imports, foreign countries would do the same, which would reduce their purchases here (our exports). Since we export more than we import, we might wind up worse than before.

This is not to say that our exports cannot be increased, relative to our imports but it will not be easy to achieve large increases in a short time.

Tourists

Several years ago the government cut from $500 to $100 the amount of duty-free foreign goods that a tourist may bring home and the President has requested legislation making a further cut to $50. A See-America-First drive is getting under way and we are trying to persuade more foreign tourists to visit the United States.

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[3]"The Balance of Payments." Federal Reserve Bank of Philadelphia, Series for Economic Education.

Nevertheless, the fact remains that foreign countries have an exotic appeal to millions of Americans, more and more of whom now can afford the trip. They will not be pleased if their freedom to travel is impaired.

Investors

In 1964, Congress passed a tax which reduces the yield on certain foreign securities sold in the United States by about one per cent a year. A similar tax is being applied to long-term loans to foreigners made by U. S. banks. The idea is to make dollar loans abroad more expensive to foreign borrowers and less rewarding to American lenders.

A special program of voluntary credit restraint was begun in early 1965. President Johnson asked American banks, and other lenders, to limit their loans to foreigners, and he urged American corporations to hold down their investments abroad.

There are several possible reactions to this phase of the Administration's program. If we successfully reduce U. S. loans and investments abroad we will improve our balance of payments, to be sure, but we run the risk of pinching the credit available to our friends and allies. Insofar as our loans to foreigners are used to finance purchases of American goods, a curtailment might reduce our exports, and worsen our imbalance by increasing the margin between U. S. receipts and payments.

In an attempt to counter such reactions, the President's program gives special consideration to export financing and investments in underdeveloped nations.

Military spending

The Pentagon spends almost $3 billion a year to maintain our armed forces overseas. A great many problems would be solved if all the nations of the world could live in harmony and we could eliminate this spending entirely. Unfortunately that time has not yet come.

Some cutbacks in military spending abroad have been made and the President promises an "intensified effort" to achieve further reductions. But with serious difficulties in Southeastern Asia and continuing cold-war pressure elsewhere, one wonders how much overseas military spending can be trimmed in the foreseeable future.

Nevertheless, we might encourage or require countries in which we maintain armed forces to buy more American goods as a balance-of-payments offset. These reciprocal agreements already exist and their number and scope might be expanded.

Foreign aid

In 1964, the United States gave $4 billion in grants and aid to other countries. The basic purposes were to assist free nations in their own defense programs and to help under-developed and newly-emerged nations

to raise their standards of living, which too often are appallingly low. Sharp reductions in U. S. aid, therefore, could make these desirable objectives more difficult to achieve.

Actually, the aid programs contain built-in offsets that lessen adverse effects on the balance of payments. About 85 per cent of the money given overseas is used to buy goods in this country thus increasing our exports. Some of these returning funds have strings tied on them by U. S. government regulation and some are spent here because we offer the best products at the most reasonable prices.

In foreign aid, too, President Johnson has promised continuing action to improve effects on the balance of payments. No doubt further overall efficiencies are possible, and many countries, which recently have prospered, should require less aid, or none at all. In fact, there is no reason why a number of now-affluent nations, many of whom we helped back on their feet in the early postwar period, cannot themselves offer more financial aid to backward countries.

Certainly our foreign aid spending can be cut, but because of our political policies and those of other industrialized nations, major reductions probably will not be easy or quick.

Imbalance, yesterday

Nations have been having problems with their balance of payments for hundreds, maybe thousands of years. In most cases trade was the major cause. One nation would import more than it exported and its total payments to the rest of the world would exceed its receipts. Usually that nation's economy had "overheated" and inflation and efficient production at home had made domestic goods and services less attractive than foreign ones.

The time-honored cure for such a problem was to reduce the amount of circulating money in the country which was buying more abroad than it was selling. (Under the gold standard of years gone by, gold would leave the import-heavy country and the money supply there would shrink automatically.)

With less money in circulation domestic prices would tend to fall. This would reduce income and purchasing power and, in turn, the demand for imports. In addition, lower prices and increasing competition among producers would make domestic goods and services more attractive to foreigners, thereby increasing exports.

A smaller money supply also should increase interest rates which would stimulate the inflow of investment money from other countries.

In these ways receipts from the rest of the world would increase, payments would decrease and the imbalance would correct itself.

Imbalance, today

Many people believe we should use the tight money-high interest cure here and now. But others are quick to point out that our payments problem does not stem from the traditional causes--inflation, efficient production, etc. Indeed, our wholesale prices have been quite stable for the better part of a decade and our exports are running at a rate more than $6 billion above our imports. Our present problem is a rather unique one, caused in large measure by the United States' position of political and economic leadership in the struggle against Communism.

Another consideration seems to make sharp tighetening of money undesirable at this time. Such a step, with its accompanying rise in U. S. interest rates, might choke off the prosperity we have been enjoying for so many years now. This would have most serious consequences, not only here at home where unemployment remains a problem, but all over the free world. A major business setback here would spread quickly to other nations.

Conclusion

After more than a decade of deficits and dwindling gold reserves, the nation now is facing its balance-of-payments problem squarely. We appear convinced that the imbalance cannot continue indefinitely, and a number of specific steps have been taken.

The present programs are considered by many to be well suited to the present problem. They are aimed at trouble spots with some precision, which should minimize offsetting reactions.

The American free enterprise system of production, has shown itself to great advantage in world competition. Thus a solution to the payments problem should be as compatible as possible with free enterprise. The voluntary credit restriction program, as opposed to additional tiers of government regulation, meets this requirement.

Yet it will be a miracle if the payments problem is solved quickly, or easily. Many of the proposed solutions should help and, if they don't, others will be tried. But it is well to remember that these are temporary programs. Even if they manage to bring our international payments in balance it is by no means certain they can keep it there indefinitely.

The best long-run solution is to maintain a vigorous and growing domestic economy. In this way we will encourage domestic investment and attract swelling inflows of foreign funds. Only a sound, competitive environment will nourish the inventiveness and efficiency to make American goods even more desirable in foreign markets.

In the final analysis, it is the strength of the American economy, the vitality of free business and labor, that must support our international political policies and goals.

Have the students evaluate the "solutions" put forward by the four characters in "Freeway Forum" in terms of the last reading.

Assignment: Have the students write a short essay on the United States balance of payments problem. Have them include a statement of the problem and the policies that they feel would contribute most toward resolving the problem.

OR

Have the students write a more extended research paper on one of the following historical topics in which they show an application of the concepts of this unit to an analysis of a historical situation:

(1) The debate over Clay's "American System"

(2) The debate over the Hawley-Smoot protective tariff

(3) The U. S. Trade Expansion Act

(4) The effect on the U. S. of the European Common Market arrangements

3. Third Situation: The Importance of International Trade (Student Materials, page 665)

   a. We have noted in the previous learning situations that <u>all</u> the flows of money and goods and services enter into the balance of payments for a nation. The case of the United States since World War II illustrates the possibility that a nation may be exporting more products than it imports and still may run a deficit in the balance of payments due to other international flows. A prolonged deficit in the balance of payments for any nation (14 out of the last 15 years for the U. S.) creates monetary problems of great importance. The discussion in the second situation centered around the importance of the monetary flows in international trade. The reading selection and the play, "Freeway Forum," also illustrated the close relationship between economic factors and political factors in resolving the balance of payments problem.

   b. The balance of payments between one nation and the rest of the world illustrates only the total quantity of goods and services flowing in and out of a nation in terms of the monetary value of those flows. The composition of the flows of goods and services between nations is also an important consideration and it is to this concept that we turn in the third learning situation. The use of the

following statistical information may serve two purposes: First, it should provide students with an opportunity to synthesize various pieces of information into a single concept, namely, that the composition of exports and imports are as important in analysis as their quantity. Secondly, it should provide an opportunity to generalize on the importance of qualitative as well as quantitative analysis in economic understanding.

Table 1: Exports and Imports in Relation to GNP for Selected Years

Year	GNP* (1954 Dollars)	Exports*	Exports as a percentage of GNP	Imports*	Imports as a percentage of GNP
1950	318.1	14.5	5%	14.2	4%
1955	392.7	19.2	5%	18.3	4%
1960	439.9	24.9	6%	23.2	5%
1961	447.7	25.5	6%	23.3	5%
1962	474.8	27.0	6%	25.2	5%
1963	492.9	28.8	6%	26.2	5%

*In billions of dollars

Source: U. S. Bureau of the Census, Statistical Abstract: 1964, p. 323

c. Students should be given the opportunity of studying carefully the above table before they are asked to respond to the following suggested focus questions:

(1) On the basis of the information given in Table 1 what conclusions could you draw concerning imports and exports as contributions to the Gross National Product?

(2) Since they constitute such a small percentage of the GNP, why should the United States even be concerned about them? Couldn't we just forget about trading with other nations?

(3) What might be the implications if we followed such a policy of isolating ourselves from trade with the rest of the world?

(4) Is a strictly "dollar value" the only way to measure the importance of exports and imports? Do you recall

what qualifications were placed upon GNP as a measure of prosperity? (Unit 7)

(5) What factors might one take into account in justifying the U. S. policy of continuing to trade with foreigners when the total amount of trade makes up such a small proportion of the total GNP?

These questions are suggested as a means of eliciting from the students some discussion of why they think exports and imports are important from a qualitative as well as a quantitative point of view. The following charts may aid the teacher in emphasizing the qualitative role of imports and exports in the U. S. economy. In conjunction with these charts the teacher may wish to probe student thinking about the relationship between:

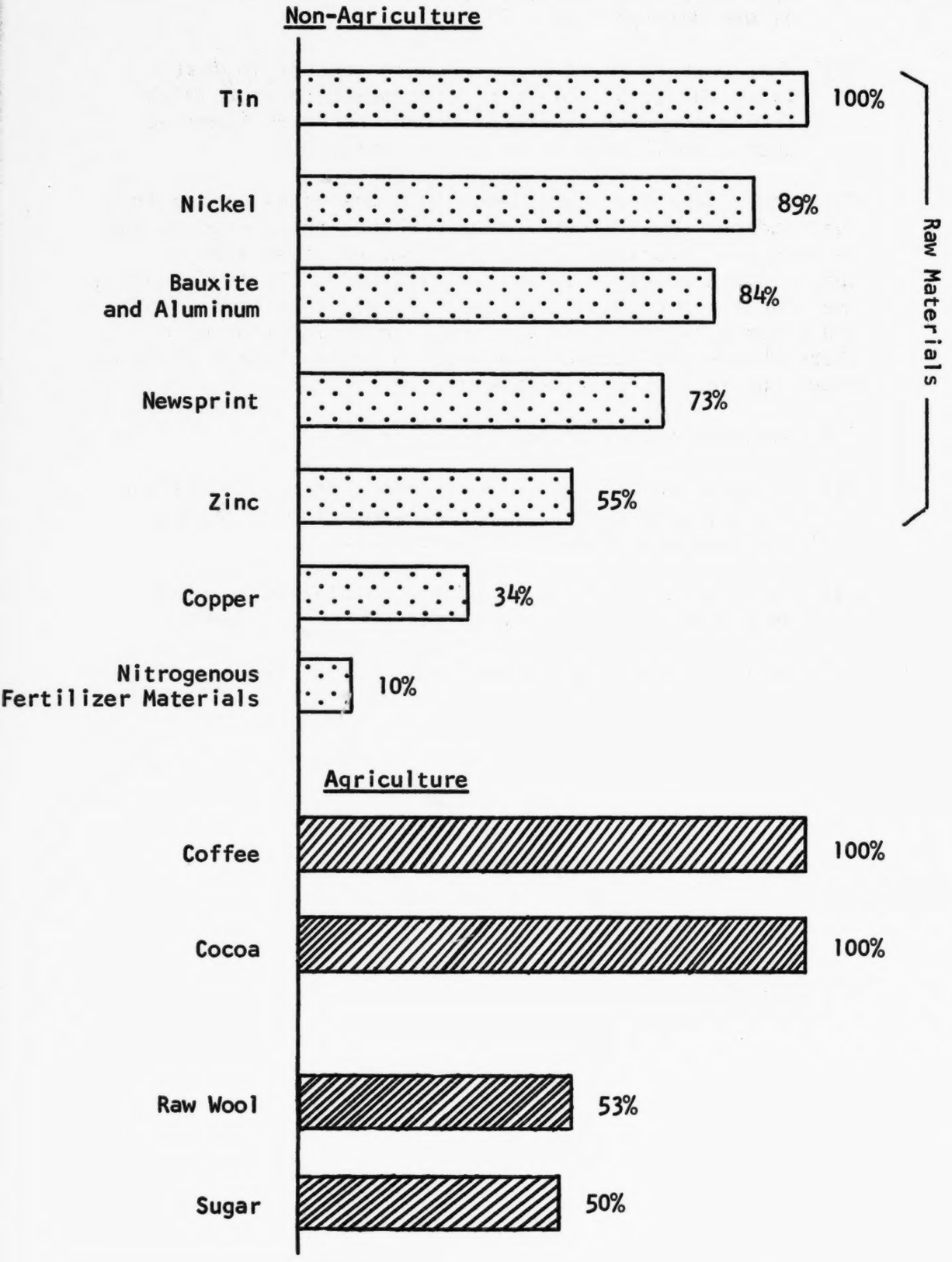
(1) National security and foreign trade

(2) Unemployment and the export/import trade ($4 million are involved directly in the export/import trade. How many are involved indirectly?)

(3) Unemployment and American foreign aid (Do we send only money and guns overseas?)

(4) American policies and overseas prosperity

IMPORTS USED BY AMERICAN INDUSTRIES[4] (Student Materials, page 666)
AS A PERCENTAGE OF TOTAL USED IN THE UNITED STATES, 1960



[4]Taken from a pamphlet published by the U. S. Department of Labor, "The American Worker's Stake in Foreign Trade," 1961, p. 5.

DOMESTIC EMPLOYMENT ATTRIBUTABLE TO U. S. EXPORTS, 1960
(Student Materials, page 667) State Distribution (In thousands)[5]

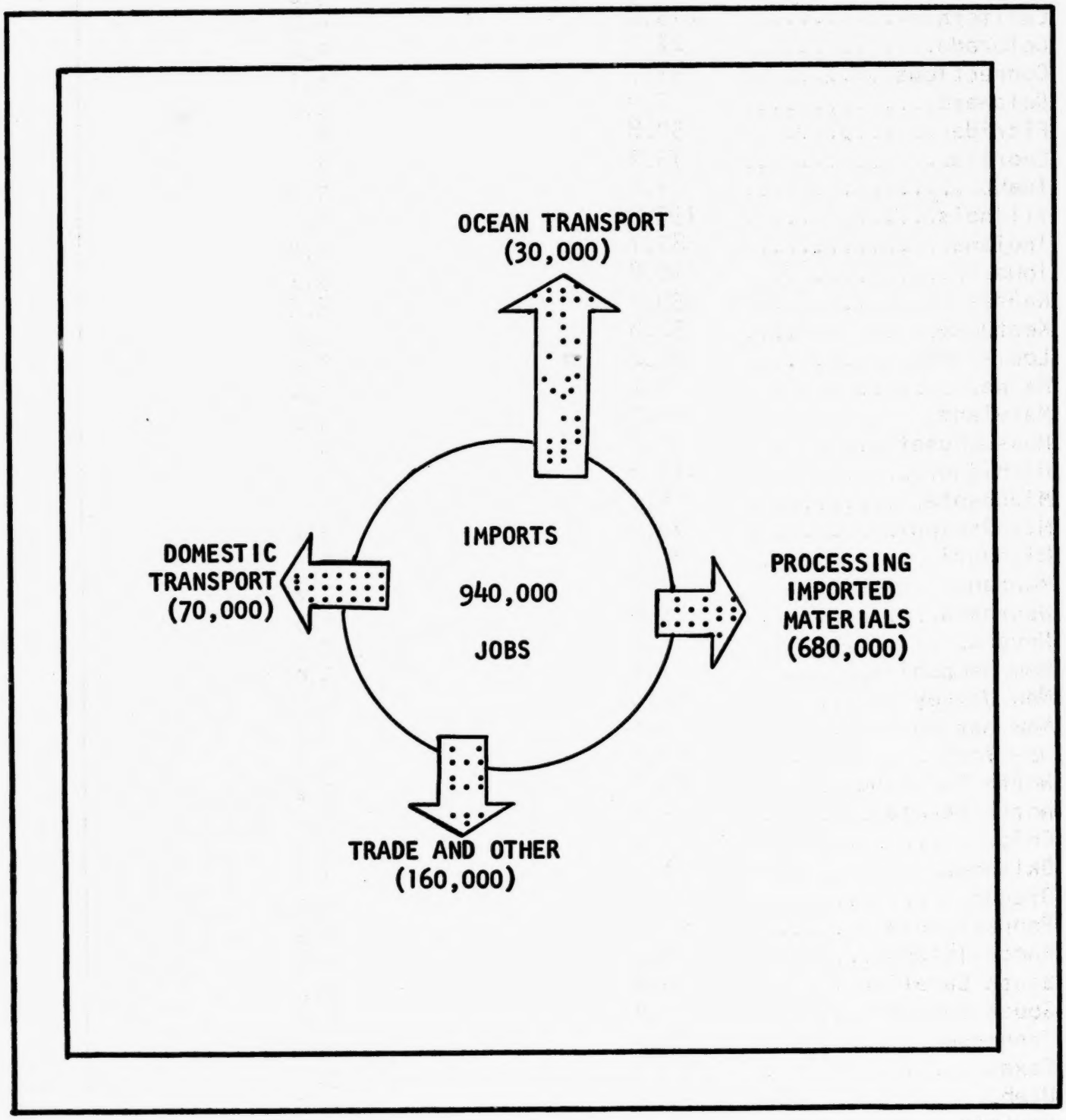
State	Total	Export employment as a percent of State employment
Alabama	71.3	9.4
Arizona	21.8	7.1
Arkansas	71.5	14.0
California	213.8	4.9
Colorado	22.7	4.8
Connecticut	51.7	6.1
Delaware	7.4	5.0
Florida	50.8	4.3
Georgia	73.2	7.0
Idaho	11.2	5.9
Illinois	197.3	6.1
Indiana	83.7	5.7
Iowa	48.8	5.7
Kansas	39.8	6.6
Kentucky	52.8	6.8
Louisiana	70.2	8.8
Maine	9.2	3.4
Maryland	39.0	4.8
Massachusetts	71.7	4.2
Michigan	115.4	5.2
Minnesota	56.3	5.3
Mississippi	76.9	13.6
Missouri	66.5	4.6
Montana	12.7	7.2
Nebraska	25.4	5.5
Nevada	2.9	3.2
New Hampshire	7.6	4.0
New Jersey	93.6	5.1
New Mexico	13.5	6.1
New York	241.5	4.4
North Carolina	89.2	6.2
North Dakota	14.0	7.6
Ohio	174.8	5.9
Oklahoma	43.8	7.1
Oregon	23.3	4.6
Pennsylvania	190.8	5.5
Rhode Island	11.5	4.5
South Carolina	48.8	7.2
South Dakota	11.0	5.6
Tennessee	70.4	6.9
Texas	231.3	9.1
Utah	11.2	4.8
Vermont	6.5	5.4
Virginia	63.9	6.2
Washington	57.1	7.5
West Virginia	32.1	6.9
Wisconsin	65.6	5.0
Wyoming	6.2	6.4
Total[6]	3,081.7	5.8

[5] Ibid., p. 10.

[6] Alaska, District of Columbia, and Hawaii are not shown separately but included in the total.

IMPORTS AS A SOURCE OF JOBS FOR AMERICANS[7] (Student Materials, page 668)

1960



[7] Ibid., p. 11.

THE COORDINATION OF ECONOMIC ACTIVITY

Unit 15: Types of Economic Systems

Part I: Sequenced Outline

I. We come now to the third and final major category--the Coordination of Economic Activity. We have examined in detail the notion of scarcity and the basic economic decisions which the situation of scarcity makes necessary (Units 1 through 6). Next we explored the notion of flows--the flow of goods and services and the flow of money (Units 7 through 14). Now we will examine the third major concern of an economy, namely, how the basic economic decisions and the flows are coordinated, that is, how economic activity is interrelated. The institutional arrangement which makes such coordination possible is called the economic system.

II. The notion of coordination has two parts: (a) the recognition of the need to have an arrangement of economic institutions to provide coordination and (b) an analysis of these arrangements--a market economy or a planned economy--to see how they actually function to provide such coordination.

III. The notion of coordination is not difficult but it is unfamiliar. One seldom inquires how our own market economy provides coordination and, of course, one is even less familiar with the workings of a planned economy. The concept of coordination is covered in Units 15, 16, and 17. It will make the presentation clearer if we state our strategy in presenting the materials.

A. In this unit, we briefly define three types of economic systems and compare and contrast the concepts of supply (costs), demand, markets, planning, and the firm in a market and in a planned one. We emphasize the <u>general</u> similarities and differences between economic systems.

B. In Unit 16, we emphasize the <u>nature and function</u> of markets in a market economy and how the four basic economic decisions are made in a capitalist economy. Because we have not taken up planning in detail, we show some comparisons of decision making in a market economy and in a planned one, but we do not attempt a parallel explanation of decisions in the two types of systems.

C. Finally, in Unit 17, which emphasizes the economic role of government, we show the economic role of government under capitalism, one part of which has to do with markets. Since in a planned economy, government's economic role is to plan, we treat planning in detail in this unit.

D. In summary, the advantage of the strategy of presentation in Units 15 through 17 is that the student sees first a general comparison of a market and planned economy, then primarily the nature and role

of markets under capitalism, and finally the different economic roles of government in a market and in a planned economy.

IV. In this unit, we will focus upon the basic similarities and differences in economic systems.

A. The three major categories into which we have divided the discipline of economics will be present in any economy.

1. The situation of scarcity and the basic economic decisions will, as we know, be a fundamental problem for any economy. The institutions through which it handles this problem will, as we shall see, be different.

2. Every economy will have a flow of goods and services and, in most cases, a flow of money. (1) Even a primitive society, not having money, would in bartering be using the good or service both for itself and as a means of purchasing. (2) The definition of the Gross National Product and the data may vary, or even not be collected, but again this is an example of a variation in economic institutions, and does not mean that the total output could not be evaluated.

3. In our discussion of scarcity and flows, we have already used the institutions of coordination to show that the problem of scarcity and flows must be handled, so we have indirectly dealt with the need for the coordination of economic activity.

B. The institutions through which every economy is organized, consist of practices, customs and laws. Property, division of labor, competition, markets, and planning are all examples of economic institutions.

C. The nature and relations of economic institutions depend upon the society's response to: (a) technology and (b) consumers' preferences.

D. Using the definition of institutions and the problems of technology and preferences, we may think of three typical economic systems:

1. A traditional economy is one in which the pattern of economic activity changes very little, very slowly, or not at all. What is produced, how it is produced and shared vary insignificantly. Examples of traditional economics are primitive societies and Europe during a major part of the Middle Ages.

2. A market economy, already familiar to us from our discussion of scarcity, is one in which signals (dollar votes) from the consumers indicate or confirm what sould be produced. In other words, by a chain of supply and demand relationships, producers and consumers decide how the resources should be used. The U. S. Economy is a typical example of a market economy.

3. A planned economy, typified by the U.S.S.R., is one in which the directives for economic activity come from a central source. Although the plan may be submitted for criticism. choices are mainly determined by a central authority.

E. A fundamental characteristic common to all economies is that no existing economy perfectly fits the basic notion underlying its economic organization. In a sense, every economy is a mixed one. In Africa, many economies are composed of a village and town economy; in the U. S., we do not rely entirely on the operation of markets; in the U.S.S.R., planning is supplemented by market activity. There are economies which have various mixtures of market and planned activity, and these are sometimes called socialist and sometimes democratic mixed economies. It is not possible to give a precise and simple summary of the influence of the market or planning in these economices. However, when analyzing an economy which is primarily a market one, such as the U. S. or one that is primarily planned, such as the U.S.S.R., we can focus the analysis on the type of economic system which predominates. One should not attempt to place economies on a continuum, leaving the impression that one economy turns into another. It is better to analyze these economies into basic components and then compare these elements. This is what is done in this unit when we show the similarities and differences in supply, demand, etc., covered below.

F. Every economic system has a history. The economic way of life emerged from an earlier, different way of life. Moreover, the economic institutions are being continuously modified in small and large ways. To illustrate, in the early stages of capitalism, usually referred to as Mercantilism, the state or government actively influenced economic activity. Under the notion of laissez-faire, it was argued that the state's activity should be held to a minimum, and the market should bear the major responsibility for decisions. Nowadays, governments in capitalist or market economies significantly influence the operation of the market place.

G. Finally, in discussing the similarities and differences of economic systems, we may examine the following grid with regard to supply, demand, the role of markets and the role of planning, and the position of the firm.

	Market Economy	Planned Economy
Supply (costs)		
Demand		
Role of Markets		
Role of Planning		
Firm		

1. Supply (costs)

   a. Every economy must face the problem of costs. These include the following characteristics of costs. These elements of supply would apply to any economy:

      (1) Fixed costs--those items of costs which are fixed for a period of time, e.g. rent, tools.

      (2) Variable costs--those items of costs which may be varied in a relatively short time: labor, materials.

      (3) The variation of costs with the quantity of output, e.g. average costs = $\frac{\text{(Total costs)}}{\text{(Quantity)}}$ may decline with a greater output and then begin to rise.

      (4) Costs and scale of enterprise: with a larger scale of output involving greater amounts of both fixed and variable costs, the average costs may be lower.

      (5) Diminishing returns: the general notion that if additional amounts of a factor of production are added to a fixed amount of other factors, the yield from the additional units will be progressively smaller.

   b. The legal definition of the supplier and his degree of freedom will vary in different economies. This aspect of supply is discussed below under the firm.

2. Demand

   a. The elements of demand illustrating the similarities concerning demand faced by all economies were discussed in Unit 6, Dividing the Goods and Services. It was indicated there that goods and services may be shared equally, by status or by the ability and willingness to buy. A capitalist or market economy relies mainly on competitive bidding among consumers, businessmen, etc., the bidding in turn resting on their ability and willingness to buy.

   b. In the U.S.S.R., planning determines how much of the total output will be consumers' goods and services. Some goods and services, e.g. medical services, are distributed equally per person; in the stores, goods and services are divided among those able and willing to pay more.

   c. In a socialist society, a larger segment of the output is devoted to collective consumption and may be divided equally e.g. fully socialized medicine. The majority of goods and services, however, is distributed by the operation of the market economy.

3. Role of Markets

   a. Both in a market and in a planned economy there will be a chain of supply and demand situations, i.e. a chain of markets.

   b. In a capitalist economy, the decisions made by producers and consumers represent their choices in the use of resources. Markets account for the major part of the decisions in the economy. In the U.S., about 20% of the GNP represents collective expenditures through the Federal, state and local governments.

   c. In the U.S.S.R., the major decisions about the use of resources are made through planning, following directives from the Communist Party. Markets operate to a limited extent in the sale of consumer goods in state enterprises and also in free markets in the sale of certain agricultural products. The main difference in the role of markets in the U.S.S.R. is that markets are not the focal point for the society's decisions about the use of its resources.

4. Role of Planning

   a. Economic planning may take place in a market as well as in a planned economy. It is the extent and use of planning that differs.

b. Individual private enterprisers make plans about their investments, sales, etc., but the economy does not operate on a central plan. Government policies are mainly directed at specific economic activities and do not constitute a formal plan for the entire economy.

c. In the U.S.S.R., planning is the major way in which the economy decides how it will use its resources.

5. Firm

a. Both market and planned economies will have some form of "business" units or firms responsible for specific steps in the production of a good or service.

b. In a capitalist or market economy, the firm (individual proprietorship, partnership or corporation) decides what and how it will produce. Public policies may influence their choices, but the entrepreneur is largely free to make his decisions.

c. In the U.S.S.R., the productive units--farms, factories, stores--may be thought of as firms, but the manager mainly operates to <u>supervise the planned production</u>; generally he is not free to produce more or less or different products in response to market demands or his own guesses. Lately, however, in some planned economies, e.g. U.S.S.R. and Yugoslavia, some freedom about these choices has been granted to management.

V. Relation to other disciplines (illustrations)

A. Geography: Geographical position may contribute to a society's isolation and therefore intensify its traditions; on the other hand, geography may also be the reason why societies are exposed to changes in thechnology and taste.

B. Sociology: Cultural traits may operate either to preserve a society's traditions or to facilitate changes.

C. Political Science: The form of government and the kind of economic system a society has are intimately related, e.g. freedom of choice in the market place at least parallels the freedom of choice at the polls.

D. Psychology: A change in a society's economic system is accompanied by changes in its values, in its methods of analysis and its range of responses.

E. History: Every economic system has a history, so we are helped in understanding both its economic system and its history by examining their inter-relationships.

SCARCITY (Units 1-6)

FLOWS (Units 7-14)

COORDINATION (Units 15-18)

UNFOLDING THE CONCEPT OF COORDINATION

Unit 15

Types of Economic Systems

Characteristics of:
- Traditional economy
- Market economy
- Planned economy

Similarities and Differences:
- Supply
- Demand
- Role of Markets
- Role of Planning
- Firm

Unit 16

Basic Economic Decisions
Market and Planned Economies

Structure of Markets under Capitalism

	Market Economy	Planned Economy
Basic Economic Decisions		

Unit 17

Economy and Government

Economic Role of Government
(Capitalism today)

Markets
(Decision-making machinery)
Planning

Flows
(Stability, Growth, Equity)

Economic Role of Government
(Communism; Socialism)

Unit 18

Economic Problems and Policies

Economic analysis and definition of problems

Economic problems and coordination

Illustrative exercises:
- Farm
- Monopoly
- Security and Poverty

THE COORDINATION OF ECONOMIC ACTIVITY

Unit 15: Types of Economic Systems

Part II: Outline of Teaching Suggestions

I. Comments on the Content

A. Problems in teaching the concept

1. Perhaps the greatest obstacle to the understanding of coordination is that most people never think of coordination itself as a problem which every society must face. Words like supply and demand supposedly describe fully how economic activity is integrated, but little thought is given to the market or planning as arrangements for integrating a chain of supply and demand situations.

2. Even if they have a glimpse into a market economy, it is very likely that little or no introduction has been given to coordination in other economic systems.

3. Then, too, coordination represents the institutional arrangement for handling basic economic decisions and matching flows. Unless a person first knows about decisions and flows, it would be difficult to know what is being coordinated.

4. It was pointed out that no economy perfectly fits the basic notion underlying its economic organization. But for those who would like a simple explanation of market or planning, it is disturbing to build a model or ideal type and then show departures from it in practice. This difficulty is reinforced when emotional conflicts demand that differences be black or white.

5. Closely allied to the dimension covered in 4 is the fact that systems have a history; thus, over time, even a system with recognizable basic features may change considerably, e.g. Mercantilism with state intervention for one class contrasted with the multiple interventions of modern governments in the interests of many and in the common good.

6. Finally, even the basic economic concepts of supply (costs), demand, role of markets, planning and the firm must be carefully restated. The usual treatment in textbooks does not provide these contrasts and comparisons.

7. With all of these reservations, can the concept be taught at all? Yes, the two essential parts of coordination (see Part I, item II) can be made quite clear: namely, the need for coordination and how such coordinations actually function.

B. The concept as part of the unfolding structure

1. Scarcity: In the discussion of scarcity and particularly, the first economic decision (What to Produce), we described the chain of markets as a mechanism for making the decision, thus demonstrating the need for coordination and briefly how it functions.

2. Flows: Our analysis of flows made it clear that the flow of goods and services needed to be matched with the flow of money. The discussion of fiscal and monetary policy suggested that institutions would have to provide the means for matching the flows, that is, providing the coordination.

3. Coordination: The concept of coordination is a logical extension of the need to make decisions and to match the flows.

4. Marginal analysis: The social mechanisms for making decisions and matching flows, either in a market economy or a planned economy, are instruments for expressing choices. Choices mean weighing one act, e.g. expenditure, against another, that is, weighing one marginal gain against another.

5. Institutional factors: The coordination takes place through customs, practices and laws, all of which are economic institutions.

II. Comments on the Learning Process

A. Vocabulary: There are two vocabulary problems that arise in dealing with coordination: first, the word may be familiar but the idea of coordination is probably much less clear; second, the names for the various economic systems (e.g. capitalism or market economy, planning) require careful analysis, they do not quickly and clearly describe the economy to which they are applied.

B. Mathematical concepts and skills

1. A market economy may be thought of as a signal-giving and signal-receiving social arrangement, that is, a process for arriving at a decision. A planned economy must prepare a plan, review it and then operate upon it. In other words, the market and planned economies each involve a series of connected steps in arriving at a decision.

2. Now, we know that mathematics involves a set of operations, for example, addition. The new mathematics, which many of the students will have had, will show them that understanding mathematics means appreciating a series of steps or operations to arrive at an answer.

3. In the sense then of mathematics and logic, one could describe a market economy this way: if a consumer is able to buy and if

a consumer is willing to buy, then he may influence what will be produced. A planned economy could be described as follows: if the central authority decides that so many shoes should be produced, then it is likely that this many shoes will be produced.

4. Coordination then is a set of institutions obeying a certain set of procedures.

C. Ability to generalize

1. Students are familiar with the need for parts of a machine to fit together if the machine is going to "work".

2. This mechanical view of coordination serves as a basis for any application of the idea of tying together, integrating or coordinating.

D. Background

1. Students know that in the production of goods that the work can be divided and yet the parts can somehow be fitted together. They will very likely know too about interchangeable parts, particularly in the contributions of Eli Whitney's to the manufacture of firearms.

2. They also know that the supermarket brings together a great variety of foods, so they may have surmised that somehow the supply is coordinated.

III. Learning Situations

A. From Teacher to Teacher

The first six units illustrated the problem of scarcity faced by all societies and the kinds of economic decisions that all societies must make in response to the scarcity condition. The next major portion of the course provided a basis for analyzing the interaction between the basic economic decisions in terms of the aggregate flows of goods and services, and of money.

Throughout the first fourteen units, references were made to the fact that both the basic decisions, and the size and composition of the flows were influenced by the various methods used in societies to coordinate their economic activity. It remains for us to deal with an analysis of the full impact of unique coordination systems on the decision-making process involved in different societies.

The particular way in which a society responds to the four basic decisions defines the economic system unique to that society. We will call this unique pattern of responses to the four basic decisions the <u>coordination system</u> for a given society.

The purpose of the last four units (Units 15 through 18) is to help the student appreciate what is implied by the coordination of economic activity. He needs to know that scarcity, flows and coordination will be problems of any economy and what are the similarities and differences in the economic systems which seek to provide such coordination. This unit seeks to make the student aware of these similarities and differences by focusing on three typical economies and by stimulating the student to imagine himself, as consumer, producer and citizen, moving from one economy to the other.

In the first situation, a description is provided of economic life in a primitive society. The student is supposed to have been set down in the midst of such an economy. He is then asked to identify and explain the economic freedoms and behavior which he is accustomed to at present and which are not present in the primitive society. A second situation, involving the same procedure makes use of an illustration from the Middle Ages.

The second situation attempts to build on the first one. In the first, the nature of a traditional economy is seen more clearly by contrasting it with a market economy. Now, in the second, the student is asked to think of himself as leaving a traditional economy and entering a market economy. Using an illustration from the emergence of capitalism, he is asked to identify what is new and strange about the operations of a market economy.

In the third and last situation, the student, oriented in a market economy, is provided with a description of a planned economy and is asked what he would find strange and different in the operation of a planned society.

B. Sequenced Learning Situations

1. First Situation: A Traditional Economy (Student Materials, page 669)

a. Every society develops a unique system for coordinating its economic activities. An appreciation of the individuality of different societies is an important insight, but any attempt to comprehend all the subtle differences presents the student of economics with a complexity that is overwhelming. A simple classification system, even with all the dangers of overgeneralization, is a necessary expedient that enables us to initiate our exploration of how societies coordinate their economic activities. We need some large categories under which we can group economic systems that share certain important characteristics. Economic systems that are based primarily on custom with little or no effort toward analysis and allocation of resources will form one category which will be labelled <u>traditional economies</u>. Systems which are primarily based on the analysis and operation of markets for the allocation of resources

will be called market economies and those systems which rely on a central plan for the allocation of resources will be called planned economies.

b. The first situation presents a short description of some of the important characteristics of a traditional economy in a historic setting. The relative isolation and the rule of custom are woven into economic practices depicted in the story.

The teacher should have students read "Saxon Security" and then attempt to involve them in a discussion comparing the present economy with the one portrayed in the story. The questions following the story are suggested as a means of focusing student discussion on making comparisons.

Saxon Security

In the glow of the open fire Alaran's father held up the two gold coins for the whole family to see. "Look, everyone," he said, "This is what our precious Alaran traded for the linen cloth we sent him to trade when the Roman garrison took up its positions across the river. He gave the commander of the garrison all the cloth we had produced from the new crop of flax and received these, these...ornaments in return." He threw the words and the coins at Alaran and turned away in disgust. Alaran's grandfather, his elder brothers and even the womenfolk took turns at criticizing him for his trading venture. "We needed Roman swords and Roman wine, not gold disks with Roman chiefs on them," they reminded him. Why hadn't he followed the usual custom of trading the linen for useful materials, they asked.

As he walked away from the mud hut that was his home, Alaran fought back the tears of shame which were almost on his cheeks and began to wonder himself why indeed he had not traded goods for goods rather than for what the Romans called money. When he went into the garrison he knew that he carried not only the linen he had helped produce but the linen dozens of his relatives had helped produce, and now he had let them down by getting for all their common labor a few gold coins. He should have realized then that the coins couldn't possibly be shared with even his brothers, never mind his cousins. That Saxon linen could have easily bought wine and other foodstuffs which his family needed or swords which they might have traded to their neighbors in return for meat and skins. He picked up some small stones and tossed them at one of the village pigs rooting around the edge of the river. He began to realize that he had been thinking mainly of his own convenience in accepting the gold--it was so much easier to carry than swords or skins of wine. The thought scared him because he had always been taught to think of the family and community welfare rather than his own. Almost as if by instinct he pulled his woolen tunic tighter around his waist and turned his direction toward the Roman encampment just across the river. He'd do something to repair the damage done to his family and his own pride. He'd trade the gold pieces for some of the things his family needed.

Picking his way gingerly across the slippery rocks and among the driftwood he eventually clambered up on the other bank and headed for the Roman

garrison. It was just about daybreak when he arrived, and he had to wait some time before the people known as merchants began to display their goods on wooden stands and to bargain with his fellow Saxons--trading cattle, wool, flax, salt and linen for Roman goods. Eventually he made his way back to his own village carrying on his shoulders a wicker basket containing four swords, two skins of wine and some loaves of Roman bread. The reception he received this time was in strong contrast to his last homecoming. Remarking that Alaran might turn out all right after all, his grandfather distributed the goods to those he felt needed them most. He kept two swords for himself saying that he planned to visit a neighboring village and wanted them for exchanging. He had just heard that swords were in demand there and horses were rather plentiful.

That night as Alaran drew his skin cloak around his shoulders and bit into a piece of roast pig he felt some pride in having maintained the family tradition.

At daybreak next day Alaran and his grandfather set out for the village one half a day's journey from their own home. With them they carried some of the Roman bread, two swords and four beaver pelts. Grandfather Oric had last visited this particular village when Alaran was only a child, and it was with some difficulty that they decided on the best route to follow. Alaran found the meadow grass a pleasant relief from the rocky and muddy land surrounding his own home. During the journey Alaran asked Oric how many people he knew in the village they were headed for. "I don't know anyone," Oric replied. "Furthermore, I don't want to know anyone. Remember, my boy, beware of strangers."

"Why then are we making this journey?" asked Alaran.

"Well," chuckled his grandfather, "partly because I wanted to get away from those womefolk for a while. I know I'm supposed to lead the family, but I hate to have my opinion asked on every decision. Besides, we can use an extra horse to help with wood hauling before the snow comes."

Arriving at the village which was situated near the edge of dense forestland, Oric sought out the chief of the community and asked him about trading a horse. The village chief refused to commit himself until he saw the swords and beaver pelts. Even then he was undecided and called in some of his relatives and asked them if they wanted to dispose of one of their extra horses for the swords and pelts. After arguing back and forth they decided not to trade the horse. They needed it worse than they did the swords and besides they could eat the horse if the approaching winter was expecially severe.

The single contact that Alaran had had with another Saxon village hadn't proved too fruitful and as he and his grandfather walked home, he wondered how long it would be before he would ever see another village again. His thoughts were interrupted by Oric mumbling something about "we don't need them and they don't need us. That's how it's meant to be."

c. Suggested questions for focusing discussion:

(1) Why did Alaran's family feel that he had used poor judgment in his first trading venture with the Romans?

(2) What did this attitude reveal about the Saxon view of the flow of goods and services, and the flow of money?

(3) How did it differ from present views and practices?

(4) What are the main differences between Alaran's day and your own?

2. Second Situation: The Emergence of a Market Economy (Student Materials, page 671)

a. An increase in trade and consequently a specialization by some societies in certain products was accompanied by the development of money economies to replace the barter economies of previous times. Not all societies made the transition and of those that did change, the speed of transition varied. The change to a money economy required some new methods for allocating resources. One such method is to create a marketplace where the relative value of goods and services are determined by individual choices in terms of supply and demand. Successful sellers receive money which allows them to purchase resources for future production. The market replaces custom and tradition as a means for allocating resources.

b. The last situation presented the highlights of a traditional society's economy. Students should now be asked to read the following fictional account of a medieval fair and compare the economy described there with that described in "Saxon Security."

Note: It is not the purpose of these situations to involve the students in an extended study of the historical development of economics. However, the teacher may wish to draw upon history for illustrative materials regarding the emergence of the market economy.[1]

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[1]See, for instance Peter Boissonade, Life and Work in Medieval Europe, translator Eileen Power, (New York: Harper, 1964). This is a paperback available in the Harper Torchbook Series.

Some of the factors which helped the market system develop may be listed as:

(1) the increase of law and order

(2) the improvement of transportation facilities

(3) the establishment of standardized weights and measures

(4) the development of a money economy

(5) the availability of credit

(6) the availability of capital

(7) the availability of raw materials

(8) the increased contacts with foreigners producing wide markets

The Old York Fair - 1465

The oxen drawn cart lumbered slowly along the rut strewn roadway as Hugh of Norton urged the animals onward with an occasional sharp prod from a long stick and with guttural sounds which vaguely resembled English and which were a source of some amusement to his niece and nephew who sat behind him on the assorted bags and boxes stacked in the cart.

"What language is that you use in speaking to the oxen?" asked Walt after his uncle had given the oxen some new instructions. Hugh laughed and responded that he had bought the oxen at the last fair from a Lincolnshire farmer and that he had to speak to them in their native tongue. "You both know how difficult it is for a Lincolnshireman to understand a Yorkshireman, even if they are fellow countrymen." Just then they were overtaken by a man on horseback who wore clothes quite unlike the rough homespun cloth of Hugh and his two companions. The stranger slowed his pace to the speed of the wagon and asked Hugh the way to the York Fair. Pointing with his stick toward the hill they were approaching, Hugh told him to continue over the hill until he came to a newly constructed bridge. "After crossing the bridge and taking the road to the left you'll soon come in sight of the towers of York Minster," he added.

After the horseman had gone Hugh commented that he had never seen so many strangers in all his life. "That fellow seems to have come from foreign parts. With those fine clothes and the bulging leather bags tied to his saddle I'd say he is probably going to the fair to lend his money to the merchants. He'll make a pretty penny too in spite of all the preaching we hear against lending money for interest. It seems as if everyone is out to make as much for himself as he can."

The cart lurched and swayed as the oxen strained on the hill and Hugh, Walt, and his sister Meg had to walk until they reached the crest. Below them in

the distance they could see a number of roads converging at the new bridge and four or five carts like their own lined up to pay the toll established by the local merchants. As Hugh paid the bridgekeeper the amount he remarked to Walt and Meg: "Two years ago I ruined most of my supplies when my cart overturned in this river. Paying a toll is a better bargain than soggy flour. It's easier than paying with a quarter sack of wool too!"

Once across the bridge they fell into line with other carts and horsemen heading for the city of York and its annual fair which would last for the next 10 or 12 days. Occasionally they could hear above the rumble of wooden wheels and the slow shuffle of the oxen the songs and voices of foreign lands unknown to them. Walt tried to explain to Meg the little he knew of geography and where these foreigners might possibly be from. The whole world seemed to be converging on York and as they passed some of the wagons which had drawn off the main road Walt and Meg tried to guess what goods they carried and the lands they had traveled from. The English carts were easily recognized; most of them held sacks of wool and barrels of salted meat. Foreign carts were easily distinguished by the strange languages their drivers used and by the large boxes of brightly colored cloth with which the carts were laden. Some carts were filled with smaller highly decorated boxes and Hugh explained that some of the merchants carried with them supplies purchased in the lands which lay many months of travel to the east. "Some rich folk like to fancy up their meals with these spices and sugar," he said. "And the ladies are always looking for sweet smelling oils and perfumes. Speaking of smells--remind me to pick up some salt herring at the fair. There was a Dutch trader there last year who had the best we've ever bought. What would we do without the fair?"

Once at the fair Walt and Meg wandered freely among the various stalls of merchandise while their uncle attempted to sell the wool he had brought to the fair. At one stall an argument was in progress over a charge of cheating. The seller complained that he had not received a fair price for the flour he had just sold and called in one of the fair officers to decide the case. The buyer protested that he measured the flour with the newly recognized weights and had given the producer the price per pound recommended by the governors of the fair. "What more can he ask for?" cried the buyer. Walt and Meg moved on as the officer attempted to convince the miller that he wasn't being cheated.

Still another complaint was heard about the low price being offered for salted beef. One producer was telling his companions that he didn't see why the money he got should be decreased simply because there was more meat available. "Doesn't seem fair," he groaned. "I put as much work into this year's beef as I did last year and I'm getting less in return."

In another stall they overheard an English gentleman pleading with an Italian money lender for a loan so that he could purchase some more silk for his daughter's marriage and spices for his kitchen. The Italian was willing to lend the Englishman the money but now the two could not agree on the interest to be charged.

Meanwhile Hugh had succeeded in selling his wool and the few boxes of lead ore he had collected. In their place he now had a leather bag of gold and silver coins, some of which he used to purchase the salt herring, flour and other commodities needed on their isolated sheep farm.

The three travelers met by arrangement at the baker's stall and after purchasing meat pies and ale they set off on their return journey to Norton. The long period of English twilight saw them almost home. Along the way were the fires of numerous camps of unknown foreign and local merchants, a persistent reminder of the increasing contacts the English were having with their own countrymen and those from across the sea.

c. Suggested questions for focusing discussion:

(1) What economic factors motivated Hugh of Norton to make the long journey to York fair?

(2) How did the fair influence Hugh's economic well-being?

(3) What evidence can students adduce from the story to indicate that the economic life of the Middle Ages was becoming more organized in comparison with the events described in "Saxon Security?"

3. Third Situation: The Planned Economy (Student Materials, page 672)

a. Another method of allocating resources in a money economy is to establish a centralized agency for planning the production and distribution of goods and services. When the majority of decisions concerning the allocation of resources are made by a small group of citizens according to a plan which they create we call such a coordination system a planned economy.[2]

b. The third situation uses another story to create a setting for the kinds of daily economic activity that typify life under such a system. Have the students read "A Bonus for the Foreman" and compare the aspects of this kind of coordination with the description of the market and traditional economies.

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[2]An interesting glimpse into life in the U.S.S.R. is given in Irving R. Levine, Main Street, U.S.S.R. (Signet Books, 1960).

A Bonus for the Foreman

Anatole Sergeyev made his way through the crowd of workers streaming out of the Moskovitch automobile plant at Shadrinsk in the U.S.S.R. He was grateful that today was Saturday and that tomorrow he would have a day off from his work as an assembly line foreman. He was anxious to get home too because he had just received notice that the assembly line section which he supervised had exceeded its quota of finished automobiles in the last month. This meant that he would have a bonus coming to him and he was eager to share the news of his good fortune with his wife Nina. As he walked quickly home he began to daydream about what he'd do with the extra money. Not that he hadn't thought about this before--ever since the quota for last month had been set and approved by the regional planning board in consultation with the chief administrator in Moscow, a bonus had been one of his main aims. Now that he had it, thoughts of some new clothes for himself and Nina or even a new Avangard television set ran through his head.

Nina was busy in the kitchen when she heard Anatole whistling as he entered their small two room apartment. "Well, what makes you so happy, Anatole Sergeyev," she asked. "Have you lost your job?"

"Oh, you know full well that I won't leave old Moskovitch until I have a better job. No, no--I haven't lost anything. I've just earned my first bonus and what a bonus it is. Almost[3] 1000 rubles because we exceeded our quota of finished cars. Imagine a 1/3 increase in my pay next month."

"Are you quite sure you'll get that much?" she asked him with a hint of skepticism in her voice. "You've had bonus promises before that never did come to anyting."

"Of course I'm sure. Comrade Karmov our plant union leader announced it at our weekly meeting. He congratulated us all on doing so well, contributing to the growth of Mother Russia and all that stuff and then he announced that everyone in our section would receive a bonus. Afterwards he showed me the bonus schedule and I can tell you, it pays to be a foreman."

He grabbed Nina by the arms and tried to dance with her.

"Stop it--can't you see I'm trying to fix a meal," she laughed as he swept her around the kitchen. "In this mood you'll have that bonus spent before we get it."

"We'll eat out," he cried. "We'll buy some new clothes, a television, a new samover, a...."

His wife interrupted him. "We could save it," she suggested.

Reluctantly Anatole agreed that that was a possibility.

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[3]Ten Rubles = 1 U.S. dollar.

Later on as they ate their evening meal they talked more about their windfall and both agreed that winter clothing was probably the best use to which they could put the money, so before the state clothing store closed for the weekend they paid it a visit and looked over the selection of coats and hats and fur lined boots.

The saleswoman asked what they would like to buy. Anatole with some pride said he was interested in buying a winter coat and his wife needed some boots. "That's our reward for exceeding our production quota at the plant," he said, adding that they just wanted to look around and would buy next week.

When Anatole told the saleswoman their sizes she shook her head and said, "I'm sorry, but we do not have those sizes. We received our quota of this year's coats and boots just yesterday and the few in the sizes you want were sold this morning. We didn't get the quota we expected. Apparently the coat and boot makers are not even meeting the quota set for them. Maybe you should go into the clothing plants Comrade Sergeyev, they need to exceed their quotas there."

Nina added with a sigh, "If the officials on the planning boards only knew exactly how many would be needed...but, I suppose they do the best they can."

As they left the store Anatole remarked that first things must come first. "The army must use up much of the coat production and who can begrudge a soldier a warm coat," he said as he looked wistfully at the rack of coats which were all too small for him.

Passing the state-operated radio and television store they stopped to admire the latest Rubin model which sold for 2600 rubles. This model cost 800 rubles more than the least expensive model but with the money they had already saved and the bonus money, they felt that they could afford the better set. They inquired of the manager about the possibilities of their buying a Rubin and were told that he had received his quota for the year but that he still had two which had not been sold. "If you want one, though, you'll have to act fast," he added.

As they walked home Anatole and Nina stopped by the "free market" where they bargained with an old woman for a sack of apples and a string of mushrooms.

"Apparently there are no quotas on apples and mushrooms," Anatole commented as he bit into an apple. It's strange that the peasants are able to guess how many apples will be called for better than the central planning board can figure how many television sets will be called for."

"Now, Anatole Sergeyev," countered Nina, "Don't you be getting so critical. After all the planning boards are only human and what they do is for the benefit of our whole nation. Besides, producing apples and mushrooms isn't quite like making television sets or coats and boots."

They continued talking about what they might do with the bonus money with Anatole complaining how and again that it didn't seem fair for the government to give him a bonus and then fail to provide enough goods for him to spend it on.

Nearing their apartment, Nina said they could possibly save it and eventually buy a car.

Anatole looked at her quizzically, opened the door for her and muttered a disgusted "Huh! I'd be gray by then." Her suggestion didn't seem to impress him in the least.

c. Suggested questions for focusing discussion:

(1) How do economic motivations differ in Anatole's planned economy from those in a market economy?

(2) What economic factors limited the choices that the Sergeyevs could make in the purchase of consumer goods?

(3) Compare the shopping trip of the Sergeyevs to one which your parents might make for the same kinds of goods. In what ways might they be similar? In what ways might they differ?

(4) Why do you think Anatole was unimpressed with Nina's suggestion that they save for a car? What aspects of the planned economy of the U.S.S.R. might defer their acquisition of a car for a number of years?

(5) What is the difference between economic choices in a planned economy and a market economy?

(6) Compare the three types of economic systems reflected in the last three stories in terms of such things as:

(a) consumer choices

(b) ownership

(c) competition

(d) use of resources

(e) consumer ability to influence economic institutions

(7) The questions suggested for this learning situation, as well as the questions suggested throughout this unit, have emphasized the differences between economies. Perhaps, it would be beneficial at this point to also discuss briefly the similarities that exist between

all economies. For example, problems of supply and demand and organizational similarities between production units (firms, cooperatives).

Note: There may be a temptation during the teaching of this situation to make comparisons between the economic system of the U.S.A. and that of U.S.S.R. While there may be a time and place for such comparisons during the student's education, it is <u>not</u> the intent of this unit to initiate a discussion of the respective values of communist and non-communist societies. The teacher must be clear in his own mind that the unit's purpose is primarily to present students with some generalizations about these systems which may aid them in understanding how different societies coordinate their economic activities.

THE COORDINATION OF ECONOMIC ACTIVITY

Unit 16: Basic Economic Decisions in Market and Planned Economies

Part I: Sequenced Outline

I. In Unit 15, we defined and discussed the general similarities and differences in economic systems. Now, in this unit, we will be more specific. The way in which the four basic economic decisions are made in a market economy is contrasted with the way these decisions are generally made in a planned economy. Since planning is a major responsibility of government in a planned economy, it will be considered in more detail in Unit 17 - the Economic Role of Government. As we noted in Unit 15, III-3, we have already dealt indirectly with coordination when we discussed each of the decisions. Now we may treat the relation of decisions and coordination with more precision and detail.

II. In the previous unit, it has already been made clear that in both a market and planned economy, supply, demand, and firms will be present. We will turn first to the various circumstances under which supply and demand may meet in a capitalist or market economy.

A. Markets under capitalism may be structured or grouped as follows:

1. The degree and kind of competition

   a. There may be a great many competitors or none.

   b. The product may be identical or be differentiated by advertising.

   c. Entry into competition may be easy or difficult.

   d. Competition may be thought of as a kind of regulation of economic behavior.

2. The degree of mobility of the factors of production (Review Unit 4, Allocating the Resources.)

   a. The factors of production may move easily from one employment to another, or they may be relatively immobile.

   b. Factors of production may sometimes be easily substituted for one another or substitution may be imperfect or impossible.

   c. Mobility may be thought of as the amount and speed of adjustment of supply and demand which can take place in the economy.

B. The following grid shows the conventional structure of markets under a capitalist or market economy:

Market Structure	Competition	Mobility	Examples
Pure & perfect competition (model for a laissez-faire policy)	Very large number of competitors Product identical	Near perfect	Certain agricultural products, e.g. eggs
Monopolistic and imperfect competition	Perhaps 20 to 30 competitors Product differentiated	Imperfect	Brand merchandise
Oligopoly	Few competitors Product sometimes identical, sometimes differentiated	Imperfect	Steel, autos
Monopoly	None	Imperfect	Public utilities

C. Different markets have different consequences and hence invite different economic policies.

1. If all markets were pure and perfect, competition would regulate and mobility would provide adjustment. Such markets could generally be left alone; government responsibilities would be a minimum. In such markets, however, it would not be possible to have large-scale enterprises, so we probably could not produce things like autos as cheaply. At any rate, very few markets are pure and perfect.

2. Most markets are monopolistic and imperfect. The result--a need for government supervision of advertising; government assistance in the training and development of manpower, etc. Some government policies may increase immobility, e.g. price supports in agriculture.

3. Oligopoly and monopoly make necessary anti-trust legislation, public utility regulation, etc.

4. Often, though the varying degrees of competition and mobility are acknowledged, the terms "free enterprise system", and "the market system", are employed to mean that even with such imperfections, the markets can be depended upon to work acceptably. Sometimes these phrases mean an acceptable combination of market activity plus government influences and controls.

5. The economic role of government usually depends upon the consequences of certain market situations and the necessary economic policies required by such consequences, e.g. monopoly and anti-trust action. The relation of government and the economy is discussed in Unit 17.

III. Basic decisions under a market economy and under a planned economy.

Decisions	Market Economy	Planned Economy
What to Produce (See Unit 3)	Signals (dollar votes) are sent through the chain of markets, indicating or confirming consumer choices. About 20% of goods and services in the U. S. are bought collectively through Federal, state, and local governments. Competition among producers, stimulated by profit motive, provides motive and direction as to what is produced. Certain types of production are influenced by regulatory bodies, e.g. Federal Power Commission.	In the U.S.S.R., sales do take place and consumers have choices at that point, but in most cases the market signals do not determine what will be produced; the decision is primarily made through planning. Markets operate with a degree of freedom in some agricultural products and in certain services. The sectors of the economy may have some influence on what the planning authorities will decide, e.g. consumer goods and services vs. defense or investment.
	In both economies, imperfections may influence what is produced, e.g. in both U. S. and U.S.S.R., changes in technology make it difficult to match workers and jobs.	

Decisions	Market Economy	Planned Economy
Allocating the Resources (See Unit 4)	Resources are allocated primarily by competitive bidding among the producers. Their ability and willingness to bid depends upon the consumers' preferences for their goods and services. Of course, imperfections in the mobility of the factors of production hinders the allocation. Workers may not know about the job or be able or willing to move. Certain policies may actually hinder the reallocation of resources, e.g. agricultural price supports tend to maintain the prevailing setup in agriculture. On the other hand, the policies directed at re-training and developing manpower help to match workers and jobs.	In the U.S.S.R., the allocation of resources is determined by the planning authorities. Unions have the responsibility of maintaining labor discipline, often involving holding the worker to his job. The government has the right to assign graduates from the universities and higher technical schools to a job for three to five years. However, evidence makes it clear that the allocation does not always take place according to plan. It is necessary to have informal contacts and to use expediters to see that the resources needed are actually made available. In some Communist-type economies, e.g. Yugoslavia, more freedom is allowed to the producers to bid competitively for the factors of production.

Decisions	Market Economy	Planned Economy
	Both market and planned economies desire a higher rate of economic growth and therefore wish to increase their efficiency (productivity) in the use of the scarce resources. The sources of efficiency are the same for both, namely, specialization, capital, scale of enterprise, motivation, education, and the use of basic and pure science. Some of these sources differ in the two types of economies. We will emphasize these differences.	
	<u>Capital</u>	
<u>Stimulating Efficiency</u> (See Unit 5)	Both types of economies appreciate the contribution of real capital.	
	In capitalist or market economies, the source of funds for capital are mainly private savings, e.g. profits retained, depreciation allowances, personal savings.	In planned economies, investment is determined by the central authorities, and the sources of funds, mainly gathered from taxes, are allocated from a central source.
	<u>Motivation</u>	
	Market economies depend primarily on the profit motive to stimulate the producers to reduce their costs. Competition serves to limit the profits. When competition is inadequate or lacking, regulatory agencies establish prices and influence profits. Wage incentives are also used.	In the U.S.S.R., incentives are differences in wages, profit-sharing schemes related to the efficiency of the producing unit, and use of labor unions to maintain labor discipline. Recently, the U.S.S.R., following the example of Yugoslavia, has given the producers more freedom in decisions affecting efficiency.

Decisions	Market Economy	Planned Economy
Dividing the Goods and Services (See Unit 6)	A capitalist, or market economy relies mainly on competitive bidding among consumers, business, etc. to divide the goods and services. In turn, the bidding depends on the ability and willingness of the buyers. But in the U. S. many goods and services are shared on bases other than ability and willingness, e.g. schools, public health. Collective expenditures are determined by Congress, legislatures and municipal councils, elected by the people.	In the U.S.S.R. the planning authorities (basically the Communist Party) determine how much of total output will consist of consumer goods and services. In the stores, goods and services are divided among those able and willing to buy. Some services, e.g. medical, are distributed equally per person. Collective expenditures in a planned economy are chiefly determined by the planning authority.

Comparisons of the consumer in the Soviet Union and the United States are not easy since a considerable part of the consumer's income in the U.S.S.R. is in the form of free services offered by the state.

The per capita real income after taxes in the U. S. is the highest in the world and is growing. Of course, tax expenditures also yield consumer satisfactions, e.g. schools and highways.

IV. Relation to other disciplines (illustrations)

A. Geography: Geographical factors may influence the degree of competition and mobility of factors of production, e.g. mountains and oceans which sometimes hinder competition and movement.

B. Sociology: Competition is a value which a society may encourage or not. Values also influence the willingness of people to move from one place to another.

C. Political Science: We have already seen how the society's laws may support competition as a regulator of economic behavior; when competition is lacking, government's regulatory responsibilities increase. In a planned economy, the political organization will provide the framework for the economic system.

D. Psychology: The profit motive serves as a guide to production and a stimulant to efficiency. Other incentives, such as prestige, may also influence economic behavior.

THE COORDINATION OF ECONOMIC ACTIVITY

Unit 16: Basic Economic Decisions in Market and Planned Economies

Part II: Outline of Teaching Suggestions

I. Comments on the Content

A. Problems in teaching the concept

1. We indicated in Unit 15, Part I, that the strategy of presentation was first to make a general comparison of a market and planned economy and then in this unit to focus upon decisions in a market economy.

2. The notion of planning, which has not yet been taken up, can still be used to contrast in a general way how decisions would have to be made if one did not have a market economy.

3. Planning is specifically considered in Unit 17, for there it is a major part of the economic role of government and can be contrasted with the economic role of government in a market economy.

4. Even though planning has not been presented, it should not be difficult for students to imagine how things would have to be if there were no market opportunities in which to participate as consumers and producers in decisions.

5. The notion of structure of markets relies upon the ability to make logical distinctions, an element of analysis which will be discussed below under mathematical concepts and skills.

6. The problem of teaching the notion of market structure is that familiarity with buying under various market conditions blunts the analysis of markets. A phone bill and grocery bills are all thought of as bills.

7. Product differentiation through advertising is so ordinary an experience that it is seldom analyzed as to its influence on prices and policies, both private and public.

8. Since competition is seldom sharply thought of as a kind of regulation, the degree of competition is usually not fully appreciated as an element of the regulation.

9. Although we have chosen not to emphasize the mobility of the factors of production in distinguishing markets, still it is another element in market structure which is seldom considered.

10. The identification of goods and services by the types of markets in which they are acquired is surely not the usual practice in public opinion.

B. The concept as part of the unfolding structure

1. Scarcity: The need for a society to handle the problem of scarcity has been continuously pointed out. Now, in showing how the market economy does make such decisions and in contrasting these decisions in a general way to those made in a planned economy, we have made the role of institutions in dealing with the problem of scarcity clear.

2. Flows: Policies concerning flows are not covered in this unit, but such policies will be affected by decisions related to scarcity and may affect indirectly such decisions. (See Unit 17.)

3. Coordination: In demonstrating specifically how decisions about scarcity may be made in a market economy, we have dealt with a major part of coordination.

4. Marginal analysis: Each of the decisions represents a choice and the market system is shown to be a social mechanism in which the last or marginal unit is directed from one use to another.

5. Institutional factors: Of course, the customs, practices and laws which set up the conditions for markets or for planning represent the use of economic institutions. We are simply demonstrating how these institutions operate in making the decisions.

II. Comments on the Learning Process

A. Vocabulary: The names which economists use to designate the various types of markets will, of course, be unfamiliar. But the greater difficulty is that these markets cannot be simply and precisely defined so that the titles are more <u>indicative</u> of the situation than they are of <u>explicit</u> <u>descriptions</u>.

B. Mathematical concepts and skills

1. If we think of mathematics as related to logic, a suggestion which we have made before, then the problem of classification of markets consists of isolating the variable factors, e.g. the degree of competition and the degree of mobility.

2. It is obvious from the words used to express the degree of competition that they tend to represent a <u>continuum</u> of competition, i.e. one can have less and less. The problem arises, then, about marking off one type of market from another. Does each partition have special characteristics? Economists struggle with these problems of separation and have only partly succeeded in structuring markets. Hence, you will face some difficulty in keeping some of the categories or structures of market

distinct. For example, what number of firms would change a monopolistic market into a pure and perfect competitive market? Note also that it is not numbers alone which separate types of markets but the presence of some other factors, e.g. the degree of mobility of the factors of production.

C. Ability to generalize

1. By identifying the structure of markets and then exploring the types of goods and services available in each, one has been able to generalize about the kind of commodity or service one is likely to fit into each "box".

2. In asking the student to think of the way a planned economy might substitute for a market economy, even though a planned economy has not been described, the student is encouraged to generalize about the opposite or negative view of a market economy. In other words, what would be the opposite or another way of handling the problem of the basic decisions.

D. Background

1. Most students have had ample experience in buying and perhaps in selling, so there is much market experience one can draw upon.

2. Since planning operates in many minor ways through economic behavior, even in a market economy students will have in their background the awareness of economic decisions which have been made for them, both as consumers and producers.

III. Learning Situations

A. From Teacher to Teacher

The previous unit offered a general comparison of economic systems. In this unit, we explored specific comparisons by emphasizing economic decisions in a market economy and a planned one. The learning situations are intended to underline the specific comparisons by making the students conscious of the variety of markets in their own economic system and sharply aware of differences in economic decisions made in a planned economy.

In the first situation, the student is asked to "walk with his fingers" through the yellow pages of the telephone book and note the variety of market supply situations which are represented. For example, how many suppliers of gasoline are there and how many service stations; how many producers of televisions are there and how many TV repairmen? Note particularly the telephone, electric, and gas services.

In the second situation, the student is presented with a chart of the types of markets and is asked to place in them the suppliers of his breakfast, his clothing, entertainment, etc. The purpose is to demonstrate the variety of markets in which we live.

In the third situation, a chart is developed for each of the four decisions, suggesting basic differences between a market economy and a planned one.

B. Sequenced Learning Situations

1. First Situation: The Variety of Market Supply Situations (Student Materials, page 677)

a. A consciousness on the students' part of the large variety of markets and the degree of competition between suppliers in their own economic system is a necessary part in their understanding the role that markets play in the coordination of economic activity. The purpose of this situation is simply to highlight the variety in the degree of competition.

b. A suggested approach to this situation is to have students examine the "yellow pages" section of a telephone book. This may be done as part of a home assignment or, if enough directories are available, as a class activity.

Rather than have students examine the yellow pages randomly the teacher should designate a number of different products or services and have students compare the degree of competition apparently existing for each product or service by having them list the number of competitors in each. For instance, in the yellow pages of the Columbus, Ohio, directory one can find the following information about the degree of competition in a variety of businesses:

Restaurants - 720*
Jewelers stores - 80*
Office supplies stores - 34*
Party supplies stores - 14
Pizza Equipment and Supplies - 2
Tumbling equipment - 1
Telephone companies - 1

The teacher may wish to use these items or choose his own, but the important point which the items should illustrate is the wide degree of competition among similar goods as well as between different goods and services.

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*Approximate numbers.

After students have listed the items in order of the degree of competition existing, they can be asked to attempt some explanation of the differences in the degree of competition among the goods and services listed.

(1) What circumstances might explain the degree of competition found in the jewelery business and the party supplies stores?

(2) How would you account for the existence of over 700 restaurants and only one supplier of tumbling equipment?

(3) Both the suppliers of telephone services and the suppliers of tumbling equipment appear to have no competitors. Are there different reasons for the "monopoly" in each case?

(4) What differences might you expect in terms of prices, service, etc., if there were only one or two restaurants rather than over 700? How may competition serve as a regulator of the restaurant business?

(5) With no competitors is the telephone company or public utilities company entirely free to charge any price and give indifferent service? How are they regulated?

Note: After students have attained some insight into the degree of competition existing in our economic system the teacher should point out that a large number of apparent competitors is no guarantee that competition is taking place. For instance, although a city may have 300 gas stations, these may be owned by only 6 or 8 gasoline companies in which case the degree of competition among gasoline stations is much less than if there were 300 independent producers competing. Merely counting the number of suppliers of one product and comparing them with the number of suppliers of another product is not in itself a completely accurate measure of the variation in the degree of competition between them. It does, however, serve as an <u>indication</u> of the <u>degree</u> of competition, and for our purposes we will assume that the number of suppliers is a measure of competition.

2. Second Situation: Market Variety (Student Materials, page 677)

   a. In the last situation the students were introduced to the notion that competition in the market economy exists in varying degrees. The second situation will consist of an examination of the four types of markets most common in the United States. By describing each type in terms of the number of firms engaged, the type of product, the degree

of competition existing, and the ease with which new firms may enter the market, it is hoped that the students will be able to arrive at functional definitions of perfect competition, imperfect competition, etc., as well as realize the variety of markets which exist.

b. The teacher may introduce this situation by referring to the Yellow Pages and the conclusions (regarding the varying degrees of competition) reached by examining them. Then go on to explain the following:

To facilitate analysis and communication some economists have separated the market system into four main degrees of competition:

(1) pure and perfect competition

(2) monopolistic and imperfect competition

(3) oligopoly (literally-few sellers)

(4) monopoly (literally-one seller)

We will use these categories but it should be clearly understood that no such clear-cut distinctions can always be made. These categories emphasize the variety of markets possible in the market economy and indicate the varying consequences and resulting policies. (See Unit 17.)

Type of Market	1 No. of Firms	2 Degree of Competition	3 Conditions of Entry	4 Type of Product	Examples (to be Supplied by Students)
Pure and perfect Competition	Very many	Very large number of competitors	Very easy	All the same	Agricultural products (wheat, eggs)
Monopolistic and imperfect competition	Many	Considerable number of competitors	Easy	Different varieties	Clothing, shoes, repair services, savings and loan, small loan, commercial banks
Oligopoly	Few	Few competitors	Difficult	Some the same--some varied	Autos, gasoline, household appliances, bikes
Monopoly	One	No competitors	Unlikely	Unique	Public utilities

After the teacher has placed the above chart on the chalk board, he should define "Type of Product" and "Conditions of Entry". "Type of Product" refers to whether the firms produce items which are identical (e.g. eggs) or items which are differentiated primarily by advertising. "Condition of Entry" refers to the ease or difficulty of anyone getting into a particular business.

Reading across the chart students can get an approximate definition of each of the market types. They can now be asked to relate these market types to the producers of the goods and services that they use continually.

The following questions may assist students in filling in the example section:

Where and why, for example, would they place the suppliers of:

(1) their breakfast--eggs, cereal, milk?

(2) the phone and electric light they use?

(3) the shoes and clothing they wear?

(4) their automobiles?

(5) home appliances?

(6) banking services?

(7) gasoline?

These questions may be used either as a home exercise or as class activity. In any case, the teacher should make certain that the students know why, for instance, they place automobiles under "oligopoly" or eggs under "perfect competition".

Note: There is no need to spend an inordinate amount of time on this situation--it is simply a means of acquainting students with the variety of market types prevalent in a market economy.

3. Third Situation: Comparing Decisions in Two Economic Systems (Student Materials, page 678)

   a. In the last two situations an attempt was made to give students some idea of the variety and complexity of markets within a market system. In spite of this variety and complexity, these markets provide a coordinating mechanism

which societies can use in making the four basic economic decisions: i.e.

What to Produce - (See Unit 3.)
Allocating the Resources - (See Unit 4.)
Stimulating Efficiency - (See Unit 5.)
Dividing the Goods and Services - (See Unit 6.)

The present situation should indicate how these decisions are made in a predominantly market economy. As a contrast, the student is helped to see how the decision may be made in a nonmarket or planned economy.

b. This situation will draw in large measure from the students' understanding of Units 3 through 6 in which the four basic economic decisions which every society must make were analyzed.

This "game" is designed to aid student understanding of the role of markets in the market economy and the relationship of markets to the four basic economic decisions in both market and planned economies.

The sentences on the following page are descriptive of the role of markets in either a market or a planned economy. Sort them according to:

(1) those that describe the decisions in a market oriented economy

(2) those that describe decisions in a plan oriented economy.

Note: One method of classifying the sentences on the next page is shown on page 458.

(1) Goods and services are distributed primarily according to the ability and willingness of the buyers to pay.	(7) The sources of funds for investment (capital) come mainly from taxes.
(2) Resources are distributed primarily by competitive bidding among producers.	(8) Competition among producers, stimulated by the desire for profit, motivates producers to keep their costs as low as possible in order to appeal to consumers.
(3) The use to which resources are put is determined by the goals set for society.	(9) The source of funds for investment (capital) is mainly private savings.
(4) Signals are sent through chains of markets indicating the pattern of consumer choices.	(10) The motivation for increased productivity is the desire to reach output goals rather than making the largest possible profit.
(5) A significant amount of goods and services are distributed on the basis of sharing.	(11) The use to which resources are put is determined by the desire for profit.
(6) The use of resources is determined by means other than bidding among producers.	(12) Consumers have choices in the market, but their choices do not act as signals in determining what will be produced.

The above sorting should give you one means of comparing the two systems. A more precise comparison may now be made by relating those sentences in the market category to the appropriate economic decision. The same should now be done for those sentences in the planned category.

As an aid in categorizing the sentences according to economic decision, ask yourself: Which sentences, descriptive of the market and planned economies, are related to the economic decision "What to Produce?" and so on through the four basic decisions.

Below is one way in which you may organize your sentences. Make sure you know why you placed each sentence where you did.

Economic Decision \ Economic System	Market	Planned
What to Produce	(4)*	(12)
Allocating Resources	(2) (9) (11)	(3) (6) (7)
Stimulating Efficiency	(8)	(10)
Distribution of Goods and Services	(1)	(5)

*These numbers, (which are keyed to the "boxes" on the previous page), do not appear in the student materials--they are placed here for the teacher's convenience.

Note: Any system of categorizing statements such as these tends toward oversimplification and the teacher should make students aware, if they are not already, that some of the sentences may not fit neatly into only one box. However, even though there may be some overlapping, the chart is a useful device to illustrate the relationship of the four basic economic decisions to the role of the market in market and planned economics.

THE COORDINATION OF ECONOMIC ACTIVITY

Unit 17: Economy and Government

Part I: Sequenced Outline

I. Following our strategy in the presentation of the concept of coordination, we have given, in Unit 15, a broad comparison of economic systems, emphasing some basic categories, supply, demand, etc. Then, in Unit 16, we focused on the structure of the market economy and how decisions are made under a market system. A general comparison with decisions under a planned economy was provided, but the study of planning itself was reserved for this unit. The reason, as we pointed out, was to sharpen the contrast between the economic role of government in a market economy and its role in a planned economy.

II. The notion of government is not easily defined because of the many responsibilities which are placed upon governments. We should remind ourselves that we are concerned only with the major economic responsibilities of government, even though its other responsibilities may have economic implications.

A. In most complex societies, there are various levels of government, e.g. federal, state, and local. Much debate naturally goes on about the responsibilities which various levels of government should bear.

B. Governments are responsible for enacting and administering laws affecting political processes, e.g. elections and social processes, e.g. marriage laws.

C. The economic role of governments may be simplified by saying that they are responsible for:

1. Collective or social expenditures for goods and services, e.g. schools, highways, health, defense.

2. Policies which affect the operation of the economic system.

a. In a capitalist or market economy, policies must be devised to make sure the markets are operating effectively and acceptably and that the flows are matched.

b. In a planned economy, formal government will be related to the preparation and administration of the economic plan which includes the basic economic decisions and the matching of the flows.

D. In this unit, we will be mainly concerned with the government's relations to markets, planning, and flows. (See III below.)

It is not easy, however, to separate the political and social responsibilities of government from its economic role.

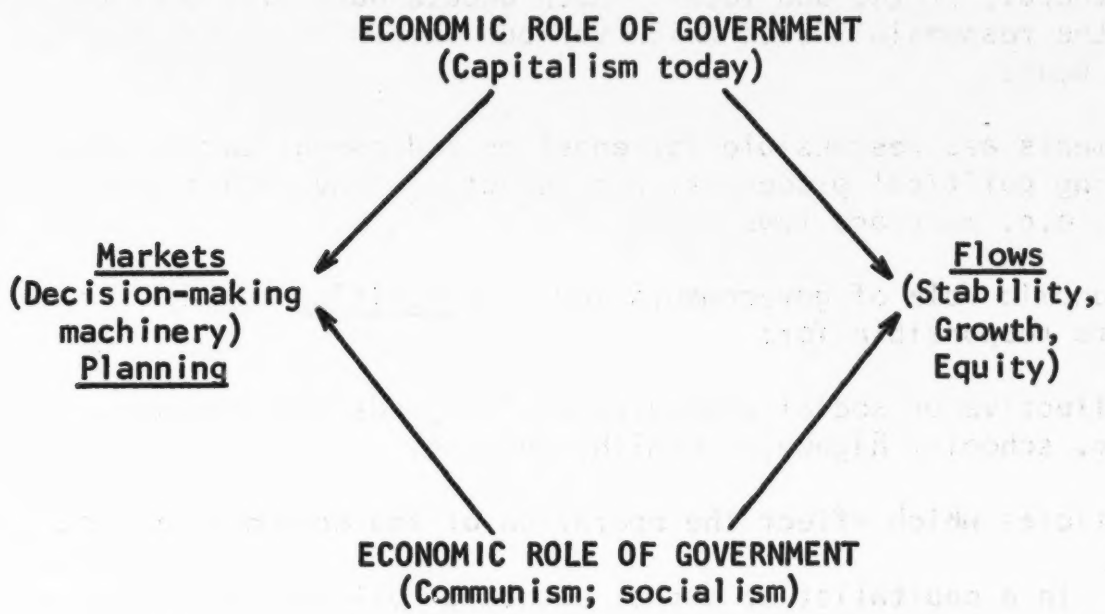
1. Although the emphasis in this unit is placed on government's relation to markets, planning, and flows, these activities affect growth, stability and equity and do have influence on the welfare of the society. We shall mention these collective effects when we discuss government's influence on flows.

2. While collective expenditures are economic in their impact, the nature of the expenditures is primarily social in purpose; similarly for defense, the purpose is political.

3. Sometimes collective or social expenditures are used as a primary characteristic for identifying an economy as a "welfare" state, or as a socialist or a democratic mixed economy.

4. The definition of civil rights may affect economic processes, e.g. the right to vote allows persons to influence the laws which affect economic activity.

III. The economic role of government in a capitalist or market economy and in a planned economy, which we are emphasing in this unit, is presented in the following outline:

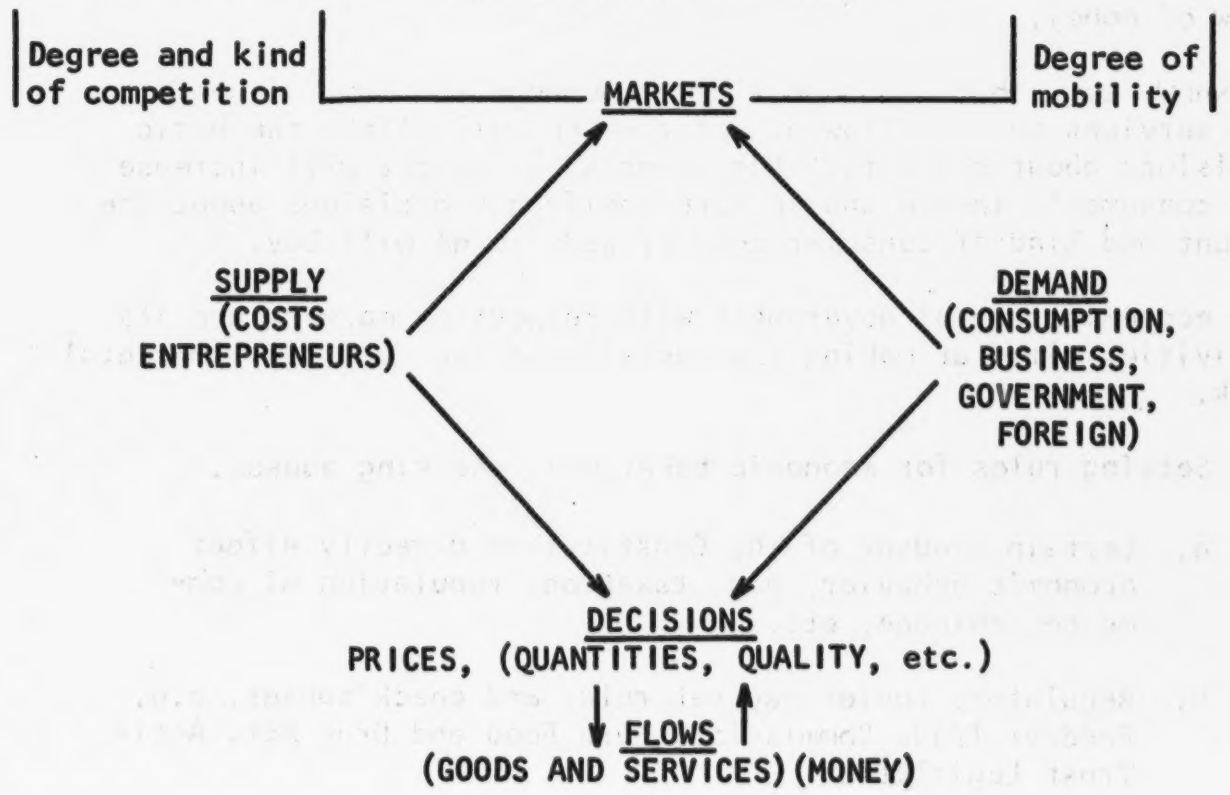


A. The economic role of government in a market economy is related to markets and flows. These relations are explained in IV below.

B. The economic role of government under communism is primarily related to planning as the decision-making machinery and to flows. These relationships are explored in V below.

C. The economic role of government under socialism is related to both planning and markets in the decision-making machinery and to flows. These relations are explored in VI below.

IV. We will first examine the economic role of government under a capitalist or market economy, using the following diagram as the model:



ECONOMIC ROLE OF GOVERNMENT

1. Markets: setting rules, checking abuses, to make the decision-making machinery work

2. Flows: Influencing Growth, Stability, Equity

A. As we already know from Unit 16, markets differ in the degree and kind of competition and the degree of mobility. Supply and demand, therefore, meet under a number of supply and demand situations, that is, under different market structures.

B. Supply, as we know from Unit 16, involves problems of costs and the definition of the suppliers.

C. Demand, as we also know from Units 6 and 15, includes the demands of the four buyers of the total product (GNP). We commented in those units on the elements of demand, e.g. ability and willingness to buy, etc.

D. Now when supply and demand meet in a capitalist or market economy, decisions are made. These decisions concern the price of the good or service, the quantity that can be provided, and the quality of the item being provided. The "etc." may cover service rendered along with the good, e.g. credit terms.

E. The decisions which are reached will, of course, affect the flow of goods and services and the flow of money. If the decision is for more of one product than another, the flow of the chosen product will likely increase along with the re-direction of the flow of money.

F. We know, too, that it is possible to change the flow of goods and services and the flow of money which will affect the basic decisions about scarcity. For example, a tax cut will increase the consumer's income and in turn modify his decisions about the amount and kind of consumer good or service he will buy.

G. The economic role of government with respect to markets are its activities aimed at making the decision-making machinery (markets) work.

1. Setting rules for economic behavior: checking abuses.

a. Certain clauses of the Constitution directly affect economic behavior, e.g. taxation, regulation of commerce, coinage, etc.

b. Regulatory bodies may set rules and check abuses, e.g. Federal Trade Commission, Pure Food and Drug Act, Anti-Trust Legislation.

2. Some regulatory bodies operate in place of the regulation imposed by competition and serve as a mechanism for establishing prices, etc., e.g. Interstate Commerce Commission, Federal Communications Commission, etc.

H. The economic role of government with regard to flows consists of those policies affecting growth, stability and equity.

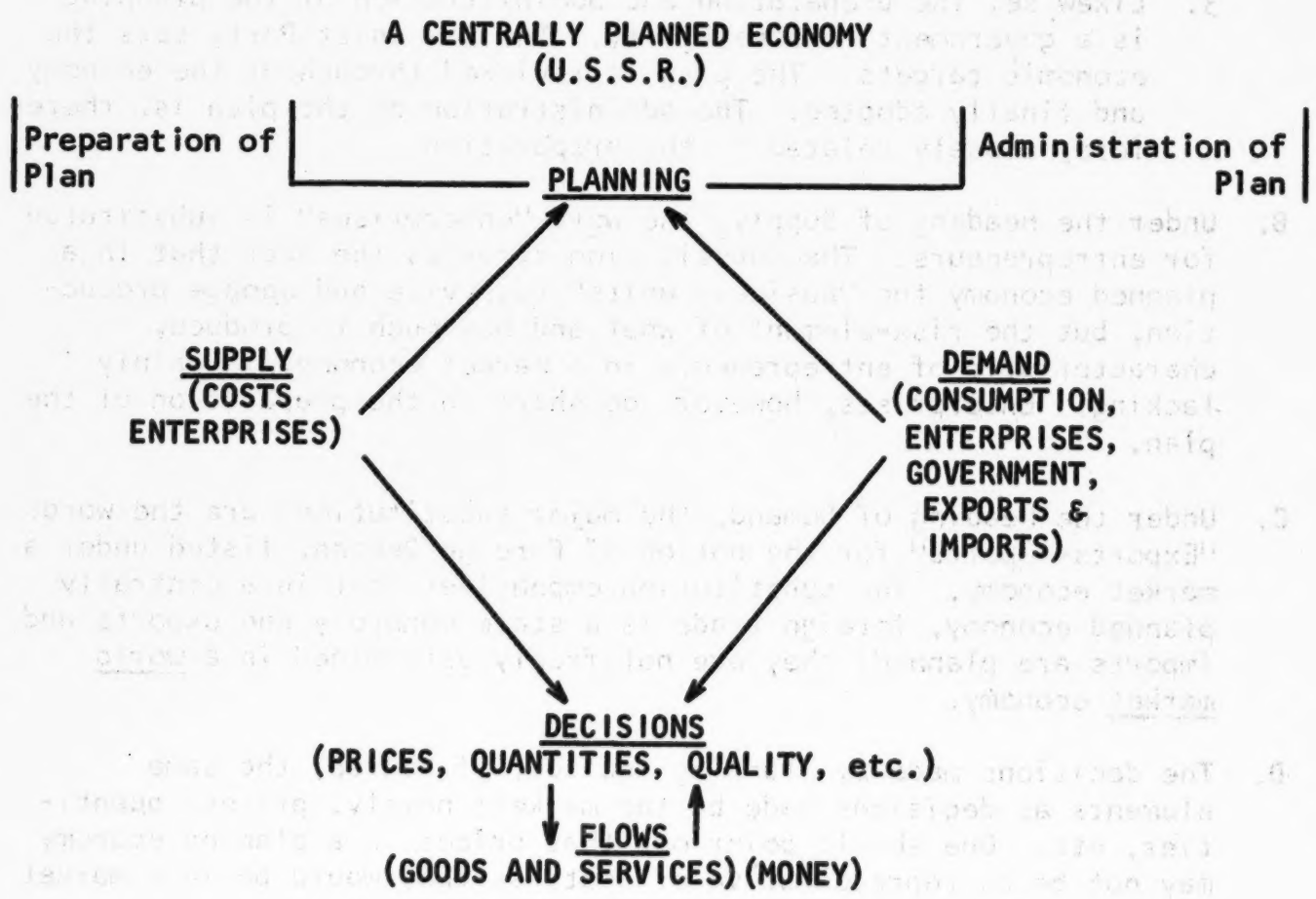
1. In each of the units on flows (Units 7 through 14) we have emphasized the role of government in relation to flows.

2. We have covered the concept of economic growth in Unit 9 and will further discuss the problem of economic growth, relating analysis to policy, in Unit 18.

3. The concept of employment stability was discussed in Unit 11, Determining the Nation's Income. The concept of price stability was discussed in Unit 13, Monetary and Fiscal Policies. The concepts of price and employment stability will also be discussed in Unit 18.

4. The notion of equity or fairness in the distribution of income and in employment opportunities was covered in Unit 6, Dividing the Goods and Services, and will be further explored in Unit 18, in the discussion of poverty and economic security.

V. The economic role of government in a centrally planned economy, using the U.S.S.R. as a model, can be presented in the following <u>simplified</u> diagram:



ECONOMIC ROLE OF GOVERNMENT

1. Planning: to be responsible for the preparation and administration of the plan

2. Flows: to influence growth and decide on the percentage of total output for consumption and the amount of consumption which will be provided collectively

A. Note that in this diagram the notion of planning has replaced the market as the basic decision-making mechanism or instrument.

1. The characteristics of the market were the degree of competition (as a form of regulation) and mobility (adjustability). In this diagram, the major characteristics are the preparation and administration of the plan, both of which are concerned with control and adjustment.

2. The government's economic organization is basically a division of the economy into sectors (e.g. agriculture, trade) and an administrative hierarchy which parallels the stages of production. Since the major part of economic activity is the

responsibility of government, the economic organization is an integral part of the general government structure.

3. Likewise, the preparation and administration of the planning is a government responsibility. The Communist Party sets the economic targets. The plan is reviewed throughout the economy and finally adopted. The administration of the plan is, therefore, closely related to the preparation.

B. Under the heading of Supply, the word "enterprises" is substituted for entrepreneurs. The substitition stresses the fact that in a planned economy the "business units" supervise and manage production, but the risk-element of what and how much to produce, characteristic of entrepreneurs in a market economy, is mainly lacking. Enterprises, however, do share in the preparation of the plan.

C. Under the heading of Demand, the major substitutions are the words "Exports-Imports" for the notion of Foreign Demand, listed under a market economy. The substitution emphasizes that in a centrally planned economy, foreign trade is a state monopoly and exports and imports are planned; they are not freely determined in a <u>world market</u> economy.

D. The decisions made by planning include, of course, the same elements as decisions made by the market; namely, prices, quantities, etc. One should point out that prices in a planned economy may not be as representative of costs as they would be in a market economy. The prices are usually set by the state.

E. The flow of goods and services may be modified by the decision of the Party to increase or decrease the aggregate amount of consumer goods and services; it would be necessary then to adjust the output for consumers according to the flow of consumer expenditures. The evidence is quite clear that even in a centrally planned economy, the flows are not always matched. Finally, the government which controls the financial institutions can direct the flow of money, but it must also direct the matching flow of goods and services since planning is the device by which total supply and demand are to be matched.

F. The conclusion, then, is that the economic role of government in a planned economy is to take the responsibility for the operation of the economy. Through planning, decisions are made concerning the use of scarce resources; and the flows are matched by the planning procedures.

G. In unit 15, it was pointed out that no economy operates perfectly according to the basic notion underlying its economic organization. Hence, while markets exist in the U.S.S.R. the government restricts their operation and subordinates their activity to the basic planning.

VI. The most difficult economies to describe are those called socialist or democratic mixed economies. A simplified diagram cannot be drawn to show the many mixtures of market and planning activity.

A. The economic role of government in relation to decisions is a mixture of market and planning.

1. The influence of government on decisions concering the use of resources is based upon its ownership or control of basic industries (financial institutions, steel, etc.).

2. A majority of economic decisions are left to the market place.

3. Usually an arrangement for informal planning exists, e.g. in France. Various sectors of the economy are involved in establishing economic goals and cooperating in a semi-voluntary participation in complying with the planned activity.

B. The government's economic role in influencing the flows is a mixture of policies used in a capitalistic or market economy (e.g. monetary and fiscal policies) and those policies affecting the composition of the flows of goods and services and the flow of money, established through planning.

THE COORDINATION OF ECONOMIC ACTIVITY

Unit 17: Economy and Government

Part II: Outline of Teaching Suggestions

I. Comments on the Content

A. Problems in teaching the concept

1. Some comments on the problems in teaching the concept of the economic role of government have already been made in the discussions of coordination. For example, little thought is given to the notion of how economic activity is integrated.

2. One may add that the definition of government is made complicated because of the multiple responsibilities which are placed upon government--social, political, and economic.

3. We must argue also that the lack of knowledge about economics makes it difficult for people to define and appraise the specific economic role of government.

4. Moreover, the levels of government in the U. S., their various responsibilities, and the inter-governmental relationships make it difficult to speak simply about "government."

5. Finally, in showing the economic role of government under capitalism, one must have a fairly clear notion of the structure of markets and the effects of the various supply and demand situations on prices, quantities, etc. It can be shown that most of the economic responsibilities of government in a capitalist economy are related to the imperfect operation of the market system and to the need and possibility of influencing the flows.

6. In addition to our difficulties in defining government in a capitalist society, we now have the additional task of appreciating the relations of government and the economy in a planned society. By the very nature of a planned society, government's political, social and economic responsibilities are more closely tied together and are more comprehensive.

7. The major broad conclusion which should be drawn from a study of the economic role of government in a market economy and in a planned one is this: In a market economy, the government may be thought of as intervening to help the market mechanism work and to influence flows; in a planned economy, the government sets the economic goals and administers the production and distribution of goods and services.

B. The concept as part of the unfolding structure

1. Scarcity: In both a market economy and in a planned economy, the economic role of government represents a response to the basic institution for handling the scarcity problem.

2. Flows: In a market economy, the economic role of government is to influence the flows through fiscal and monetary policies. In a planned economy, the government seeks to establish the flows in its planning.

3. Coordination: In a market economy, coordination is based upon a chain or web of markets, with government seeking to make the markets and flows function acceptably. In a planned economy the government administers the plan, that is, directly controls the coordination.

4. Marginal analysis: In a market economy, decisions by private persons will depend upon judgments about the uses of additional resources in one direction or another; likewise marginalism influences public policies. In a planned economy, efforts also are made to allocate resources according to the best use of additional units of the factors of production.

5. Institutions: The fact that government's economic role will depend upon the basic institutions for coordination illustrates the inter-relationship of institutions.

II. Comments on the Learning Process

A. Vocabulary: Comments have already been made about the difficulty of defining the concept of government either under capitalism or a planned economy. One can question, then, whether the word "government" does help the student recognize the function and role of government. The adjective "economic" in the phrase "economic role of government" indicates how careful one must be in the use of language; the phrase describes more precisely, but each word must be emphasized. The same comment applies to the notion of "role".

B. Mathematical concepts and skills

1. While not properly described as a mathematical concept or skill, the words "intervention" and "plan" could perhaps be illustrated by physical analogies. Intervention implied that government seeks to influence the speed and direction of economy as though one were affecting the movement of an object. Like all analogies, this one should be cautiously used, but it may help. On the other hand, a planned economy suggests a machine one is controlling--the plan and the planning organization set up the machine and administration "runs" it.

2. The basic economic institutions for the economy will help define the economic role of government, e.g. imperfect markets and government's responsibilities. One can, therefore, think of the basic economic institutions as assumptions and the economic role of government as an implication. It might be expressed as an if-then statement, e.g. if an economy is going to be planned, then the government may prepare and administer the plan.

C. Ability to generalize

1. Incorrect generalizations about government's economic role abound, but the fact that many people "jump" from a statement of government's influence to a generalization about its "growing power" does show a certain ability and tendency to generalize.

2. If a society accepts a market system as its basic economic organization, it has in fact established a generalization; the same could be said about a society which accepts planning.

D. Background

1. In their courses in American history, students have encountered many illustrations of government activity in the economic sphere, e.g. mercantilism, Interstate Commerce Commission, Federal Reserve System, etc.

2. The notion of government participation in economic life is very prominent, even if it is poorly understood and inaccurately appraised.

III. Learning Situations

A. From Teacher to Teacher

In Unit 17 is a continuation of the plan for analyzing coordination systems which was laid out in Unit 16. We have discussed the role of markets in both market oriented and plan oriented economies. This unit investigates the role of government in both economies.

The role of government in the coordination of economic activity can be sorted into two major kinds of activity: (1) policies of government that regulate and/or control the use of resources and (2) expenditures made by government in behalf of the welfare of the whole society (social expenditures).

The first and second learning situations in this unit discuss the role of government in terms of policies that affect the use of resources in a market oriented economy and in a plan oriented economy, respectively.

The third learning situation centers on the role of government in terms of the intent and extent of social expenditures first in a market oriented economy and then in a plan oriented economy. The following outline is a guide to the unfolding concepts of this unit.

B. Sequenced Learning Situations

1. First Situation: The Role of Government in the Market Economy (Student Materials, page 683)

a. Government's economic role in the coordination of economic activity is fundamentally different in a market economy than in a planned economy. The purpose of this situation is to show the government's economic role in a market economy. The second situation will serve a similar purpose for a planned economy.

b. This situation will provide students with a number of statements about the workings of a market economy and the activities of the government. The student may be assigned an examination of certain government agencies and activities and be asked to discuss them the next day in class.

The situation may be introduced by a discussion in which the teacher attempts to have students recall past learning situations which answered such questions as:

(1) What is the most distinguishing characteristic of the market economy as compared with the planned economy?

(2) What is the function of the market in the market economy?

(3) What are some of the relationships between the degree of competition and government economic activities?

(4) What overall objectives do governments have in a market oriented economy?

After students have participated in a class discussion focusing on these questions the teacher may summarize by using the resume given below:

(a) A capitalist economy relies primarily on markets.

(b) The market system is a social arrangement for passing signals from consumer to producer.

(c) Markets differ in the amount of competition which is present and the amount of mobility of the factors of production.

(d) Because of the imperfect competition and mobility, some of the effects of markets on prices, etc., have caused government over the years to influence the decisions made in market places.

(e) Government has also tried to assure growth, stability and equity.

c. Specific instances of the government's role in the economy of the United States should now be considered. Using the list of regulatory bodies and regulatory legislation printed in the Student Materials the teacher may wish to have students (either as individuals, pairs or groups) examine each of these attempts at intervention on the part of the government. The questions following the list are offered as guidelines in answering the general question: What role does government play in the operations of a market economy?

(1) Interstate Commission

(2) Federal Trade Commission

(3) Pure Food and Drug Act

(4) Securities and Exchange Commission

(5) Federal Reserve Act

(6) Federal Deposit Insurance Corporation

(7) Economic Opportunity Act

(8) Labor Management Relations Act

(9) Fair Labor Standards Act

(10) Social Insurance Acts

d. Questions

(1) What are the responsibilities of the agency?

(2) What circumstances brought it into existence?

(3) How does it fit into the operation of the market mechanism or the flow of goods and services and the flow of money?

Note: Sources for information on the above list include:

(a) Encyclopedia Year Books

(b) U. S. History texts

(c) U. S. Government Manual, U. S. Government Printing Office, Washington, D. C.

2. Second Situation: The Role of Government in a Planned Economy (Student Materials, page 683)

a. In the first situation, government's economic role in a capitalist economy is shown to be primarily one of intervention to make the market system and the flows work more effectively. Now we wish to show that in a planned economy, government's economic role is to plan and administer most of the economic activity.

b. The materials for a planned economy will be drawn from the U.S.S.R. Since it is not likely that an American student could have such a free and open exchange with a Russian student, we must allow ourselves some poetic license in arranging and presenting their discussion.

c. Accounts of the economy of the U.S.S.R. and its planning procedures can be found in the encyclopedias (the Britannica, the Americana, etc.). As an aid to the teacher, to provide background for discussion, passages from Meno Lovenstein's Capitalism, Communism, Socialism (Chicago: Curriculum Resources, Inc., Scott-Foresman Company, 1962), have been included in the appendix to this unit. The passages have been modified slightly to accommodate some recent changes in the Soviet economic organization.

A Meeting in the Cafeteria in the Tower of Babel

Once upon a time--we must begin this way, for it is not likely that an American student and a Russian student could meet each other, overcome the language barrier, and speak as easily and as freely as we overheard them talk. But if they could meet and discuss the economic roles of their governments, this is what they would probably say. So let's pretend it happened! By the way, they've been talking about other things, but as we moved our chairs nearer, we heard our American student say--

John: I know you have a choice when you go to your stores to buy, but somebody else told the stores what they would have to sell.

Ivan: Of course, what's so strange about that?

John: What's so strange? In my country, stores listen to their customers, and the customers tell them what they should have on their shelves.

Ivan: Well, I think our way makes more sense. The Party knows what is best for us and they work up a plan which tells us what we should produce and sell.

John: They work up a plan--what do you mean by that?

Ivan: It's really very simple. The Party knows better than the people how our scarce resources should be used. They have some people whose job it is to plan, called the Gosplan. Of course, the Party gives them the figures they should use, e.g. how much should go for consumers and how much for factories and that kind of thing.

John: So you believe the Party knows best and just tells you what to do.

Ivan: No, the Party is wise enough to send the Plan to the people who are going to make the goods and ask them to review and criticize it.

John: Yes, but those who do review it are probably members of the Party and only 4% belong to the Party. And what about the consumers--do they get a chance to review the Plan?

Ivan: Well, just as in your country, they don't have to buy the consumer goods if they don't like them.

John: That's really not the point. The question is, "Do the consumers have any real say?"

Ivan: I think they do because the Party has ways of knowing what consumers think and need.

John: But once the Plan is reviewed, whatever that means, the Party still administers the Plan.

Ivan: Of course, who else would you expect to run the country? The government has ministers that run various branches of industry, trade, and agriculture. You have a postmaster general who runs your post offices.

John: But that is only one service. In my country, the government doesn't run everything.

Ivan: They don't in Russia either. The people on the collective farms can sell some of their products in a market.

John: I know, but selling freely in the market place is not typical in your country, and only a small part goes on that way.

Ivan: That's right, but we are allowing more choices in buying and selling. We believe in planning. Letting producers make some choices is only a way to make planning work better.

John: Then you don't really plan and control everything you do. I know you are always revising your plans.

Ivan: Of course, the Party often has to change its plans, depending on conditions. Sometimes we decide to administer the plans through regional councils, but recently the Party decided that more central control was needed.

John: Do you realize how many times you say "the Party"? I wonder if you realize how different your way of thinking is than ours. We see the producers and consumers deciding what shall be made and sold. The government steps in only when necessary. But in your country, the Party really runs the economy and makes all of the basic decisions.

Ivan: And you think that's wrong. What's wrong about it? After all, the Party. . . .

The great differences between John's way of thinking and Ivan's broke the spell of their conversation.

d. Questions for Focusing Discussion

(1) What is Ivan's point of view regarding the importance of government planning in influencing the allocation of resources and goods and services? Who decides how resources will be used in the U.S.S.R.?

(2) What is John's point of view regarding the importance of consumer choices in influencing the allocation of resources and goods and services?

(3) What are the most important differences in the market and planned economies with regard to the influence of government and the influence of consumer choices?

(4) Are the decisions reached by Gosplan able to be changed? Explain.

(5) How would you explain the ease with which Ivan accepts planning as the "natural" thing to do?

APPENDIX

The following excerpts are taken by permission from Meno Lovenstein's Capitalism, Communism, Socialism:

Government and Economic Organization

From the brief review of the history of the U.S.S.R. and of Communism and the Communist Party, one can easily guess what is the relation of government and economic organization in the Soviet Union. The Communist Party has two responsibilities; first, to run the government, and second, to run the economy. To carry off these responsibilities there must be a close interlocking between the government and the economy. And, of course, the Communist Party is the interlock.

The Union of Soviet Socialist Republics is a federation of fifteen union republics. Each of them has its own constitution, budget and laws which must not be in conflict with those of the U.S.S.R. Each of them has limited powers in its foreign relations and military forces, but these powers have meant little. The Russian Soviet Federated Socialist Republic (R.S.F.S.R.) is the most important, having about three-fourths of the total area of the U.S.S.R., about half of its population, and the most highly developed industrial areas. There are local governmental units in cities, villages, and rural districts.

The government of the U.S.S.R. and the Communist Party may be thought of as two vertical parallel lines. At the bottom of the government are the people at the bottom of the Party are the party members. At the top are the Presidium for the government and the Presidium of the Central Committee of the Communist Party. The government has the familiar responsibilities for foreign affairs, defense and education. Because of the Communist set-up of the economy, it must also plan and supervise production in factories, farms and stores. The administration of production is entrusted to the Council of Ministers, each minister having responsibility for an area of economic activity. As an analogy, you may imagine the United States Cabinet having a Secretary of Automobiles who would manage and operate (through subdivisions) the automobile industry. A fuller description of planning and administration is given later in the section on Coordination.

The Communist Party maintains control of the government and the economy because it is the only legal party. The Presidium of the Supreme Soviet is composed of party members; and each Minister is a party member. Party members occupy the key positions in agriculture, industry and trade. Finally, the "cells" of the Party serve as eyes and ears for the operation of the economy. A good deal of criticism of economic, but not political, matters is permitted and encouraged. The Presidium of the Central Committee of the Communist Party establishes policies which are already known by the Presidium of the Supreme Soviet and the Council of Ministers, since in most cases the same people control both groups. (pp. 76-78)

Deciding What Will Be Produced

In the United States, as we know, the decisions about what to produce are made through a market system. In the U.S.S.R. the decisions are made by planning. General goals and policies are set by the Council of Ministers from directives given by the Presidium of the Communist Party. They indicate the increases in output and investment and the proportions for military expenditures and consumer items. A plan is prepared for the U.S.S.R. and is adopted by a Party Congress and by the Supreme Soviet. More will be said later about the planning procedures and administration in the section on Coordination.

There are many gaps in our knowledge of Soviet economic planning. We do know that planning does not cover every item but only basic commodities and sectors. The planners try to build in some flexibility by breaking up the Plan into shorter annual plans. We know the planning does not work perfectly and requires much intervention to make it work. The Soviet Union has made many modifications both in the preparation and administration of the plans and is still experimenting. But the Communists believe in planning as the best way to guide the choices and to stimulate the growth of the economy.

They argue also that economic planning is democratic because many share in the details of the planning. However, the major directives are not democratically determined. For example, more consumer goods and services would very probably be produced if the people had their way. Russian consumers can choose between the goods being offered, but more television sets will not be produced just because they want them or are able to buy them. In fact, it is the low level of consumption that has made the planning easier. Would the Russians be able to plan if they could produce as many consumer goods as the U. S. and if they were to leave the consumers free to choose? If consumers had the right to say what should be produced, it would affect the direction of investments in factories and farms. Would it be, then, as easy to plan investment? These questions cannot be answered now, but it is clear that decisions about what to produce can be made by planning. This method of decision-making is basically different from making decisions through a chain of markets. (pp. 78-79)

Planning the Soviet Economy

Much has already been said about planning in the U.S.S.R. We needed to know something about planning to see how decisions are made and how the flows of goods and money are controlled. Now a summary is necessary to show how the U.S.S.R. relies on planning to coordinate the production and distribution of goods and services.

Although the Communists nationalized the land, industry, and the banks as soon as they came to power in 1917, they were not sure how they should control the economy. During the period of the New Economic Policy (1921-1928) a great debate was waged about industrialization and the position of agriculture. Should the economy be left half free from nationalization and work its way slowly towards communism? Or should the

Communists collectivize agriculture and turn immediately to central planning? In 1928, the first of the Five-Year Plans was begun. There were six Five-Year Plans, not all of which ran five years. The seventh plan, called the Seven-Year Plan, was designed to run from 1959 to 1965.

COORDINATION	
Markets	At present, markets have little influence
Planning	Primary reliance
Role of Government	The Communist Party sets economic goals, runs the government, and the economy.

Each of the Plans had general goals which the Soviets hoped to reach. During the Five-Year Plans emphasis was placed on the development of important sectors--electric power and machine-building. In the Seven-Year Plan, the important sector was broadened to include petroleum and gas; there was dependence on electronic computers for more precise controls. Decentralization into regional economic councils was planned to improve administration. This last plan also called for marked improvement in the consumers' standard of living.

Planning procedures have already been described. In summary, targets are set by directives from the Communist Party and the Council of Ministers, based on achievements in the previous period. A plan is developed from the lower enterprises upward until it is consolidated into a national plan by the U.S.S.R. Gosplan. The planners use the device of a material balance; that is, a supply plan for an item, for example, steel, which shows on one side of an equation the amount of available steel and on the other the users of the steel. The material balances represent supply and demand summaries for more than a thousand items. Balances are also prepared for labor, investment, power, etc. In addition, a financial plan and the Soviet budget, both already covered in the discussion of flows, help the planners summarize the supplies and demands of the economy.

Deciding the amount of resources that will go into investment, consumption or the military is a matter of policy, but when the planners have to choose among investments, can they really be sure that they have placed the resources where they yield the most? When the Russian economy was simpler, these choices were easier, but as the economy becomes more complex, it is more difficult to know which choices are best. The planners do not allow or follow a market test to indicate what is considered the most desirable use. They can guess how long it will take for an investment to pay out, but the guess will vary and be uncertain, since producers are not free to pay for capital what they consider it to be worth.

Nevertheless, their planned economy has enabled the Communists to produce an enormous amount of goods and sustain a rapid growth rate. Coordination in the use of resources, however, is not always efficient. How much, then, of the working of economic planning is due to the way it is administered? (pp. 88-90)

Administration: Formal and Indirect

In any country, one must often distinguish between the formal and legal organization and the actual or indirect way things really work. Earlier in a brief description of government and economic organization in the U.S.S.R., we saw how the Communist Party was the interlock between the government and the economy. Now we need a closer look at the actual administration of the system. The management of the U.S.S.R. is in the hands of the Council of Ministers, each minister heading a government department. There are two types of departments: (a) the "All-Union Ministries" handle affairs of importance to the entire nation, and have no counterpart ministries in the Republics; (b) the "Union-Republic Ministries" deal with matters also important to the nation but with local variations needing local attention. These ministries have counterparts in the ministries of the republics. The Ministry of State Control (U.S.S.R.) serves as inspector for the entire administration. Over the years, the ministries of the U.S.S.R. have often been shifted, renamed and reorganized. The organizational pattern of the U.S.S.R. still serves as a model for the Republics although there is considerable variation. The Russian Soviet Federal Socialist Republic (R.S.F.S.R.), the largest and most powerful Republic, is closely allied with the government of the U.S.S.R. and has a major influence over the whole country.

In 1957, the Soviet Union made a fundamental change in the administration of the economic system. The economy was decentralized into 105 regional economic councils. Each Regional Economic Council was responsible both to the Council of Ministers of the Republic in which it was located and also to the U.S.S.R. Council of Ministers. The Regional Economic Council has an industrial or administrative department for each industry, and each of these administrations has under it the operating enterprises. In 1961, the number of Regional Economic Councils was reduced to 17 and responsibilities were shifted. Recently there has been a re-centralization into 20 ministries. The changes in 1957, 1961 and 1965 show that the Soviet Union's managers have problems about centralization vs. decentralization similar to those that an American business must face, but their problems are complicated because they are trying to administer the entire economy.

The problems of management are even more acute in agriculture. The Soviet Union has two types of farm organization. State farms (Sovkhozy) are owned by the state and account for 25% of production. Collective farms (Kolkhozy) work the land owned by the state under certain laws and regulations governing their activity, division of product, etc. Among the reasons for the agricultural lag is the lack of incentives for production, which is related to the form of organization and the need for better farm management

Indeed, one of the striking developments in the "workers' state" is the slow and begrudging recognition of the role of management. Opinions differ about the emergence of a "managerial class" in the U.S.S.R., but the society has made profound changes in the ideas about administration. Arguments about centralization and decentralization turn not only on improved efficiency, but also on power struggles with the centralized bureaucracy.

Studies of the "Red Executive" indicate that he has many responsibilities similar to those of American executives; however there are special characteristics determined by the system under which he operates. He is usually a college-educated engineer; he usually has much early experience directly in production and starts his career as a minor executive rather than a staff or technical man. The "Red Executive" is primarily concerned with production, with meeting schedules and with performance. Bonuses, which are a significant part of his income, reward him for success; while penalties are not as severe as they were, he can be quickly demoted or fired. To meet production schedules, the director must make use of "influence" (the Russians call it blat) or the services of a "fixer" (tolkach). While illegal, these indirect procedures are tolerated, for they help to make planning work.

To appreciate fully the difference between formal government and the actual workings of the Soviet Union, it is necessary to keep sharply in mind the nature and operation of the Communist Party. (pp. 90-92)

Role of Government and the Communist Party

To provide a quick introduction to the Soviet Union, a brief description was given earlier of the government in the U.S.S.R., the economic organization and the Communist Party. Now, with the workings of the Soviet economic system before us, we can better appraise the role of the government and particularly its domination and control by the Party.

As described in the Soviet Constitution, the government appears to be democratic. Deputies are elected to two bodies of the Supreme Soviet: to the Soviet of the Union according to population; and to the Soviet of Nationalities according to political units (Union Republics, etc.). In a joint session, the two chambers elect the Presidium of the Supreme Soviet. Although, in appearance, power belongs to the people and is delegated to those at the top, in reality Soviet life is ruled from the peak of the pyramid by the Communist Party.

Is the Supreme Soviet of the U.S.S.R. only a mockery of democracy? As a lawmaking body, contrasted with the U. S. Congress, it is obviously not free and democratic. Yet the Supreme Soviet serves certain ends. It provides the illusion of democracy and some far-fetched promise that it will be real. The meetings give the Party a sounding board for public opinion. Finally, the deputies (mostly Communists or Communist-approved) convey back to the people the ideas and plans of the Party.

Finally, then, all questions of real power come back to the role of the Communist Party. This single legal Party, comprising about 4% of the population, exercises firm direction over the government and the economy. A highly disciplined minority, it presumes to understand Marxist doctrine and therefore to know what needs to be done and should be done. Actually there are bitter differences of opinions and terrifying struggles for power within the Party, but these differences are not settled by public elections. They take place behind the scenes and have ranged from terror to "palace revolutions." These methods and attitudes about political decisions influence every aspect of Russian life.

Party power is concentrated in the Presidium but its sources come from the hierarchy of the party reaching into every corner of Soviet society. The Party has cells in all of the ministries, in the armed forces, factories, stores, universities, and farms. Directors of enterprises are party members; of course, the Council of Ministers and the Presidium of the Supreme Soviet are Communists. Frequently national policy is announced in joint decrees of the Party and the Government (which, by the way, is not constitutional). (pp. 92-95)

3. Third Situation: Social Expenditures
(Student Materials, page 685)

a. The extent of government's role in economics may be quantified to some extent by an examination of the social expenditures made by government under market and planned economies. This third situation will attempt to delineate the extent and also the intent of social expenditures in both market and planned economies.

b. Social expenditures may be defined as those expenditures of public funds made by government for public welfare. This situation may be introduced by a class discussion centering around the question: What items do governments buy for public welfare purposes? (It might be necessary for the teacher to distinguish between "public welfare" and "relief welfare." Relief welfare is only one part of the total social expenditure made for the general public welfare.)

The teacher may list student responses on the chalk board. After a dozen or so items have been listed, ask the class to scrutinize them carefully asking the question: Do each of these items represent a social expenditure by government? The test of such a social expenditure is its contribution to the general public welfare and students should be persuaded to give reasons for classifying the items as they do.

One such possible list might include:

roads
missiles
mosquito abatement
smog control
garbage disposal
education
health inspectors
pensions
unemployment compensation

c. Some of the items in the previous list are social expenditures which are made at the local or state level of government. In this situation we have chosen to deal primarily with social expenditures at the national level. Social Security expenditures are representative of this type of social expenditure at the national level. This does not include items such as education or highways, both of which are part of the overall social expenditures of the federal government. A comparison of the U. S. and eight selected European countries may aid students in realizing the different degrees of Social Security expenditures. The following table indicates these variations:

Social Security Expenditures of Common Market Countries, Sweden, the United Kingdom, and the United States, as Percent of National Income, by Major Types of Coverage, 1962

Country	Total	[1]OASDI	Sickness and maternity insurance	Unemployment insurance	Work-accident insurance	Family allowances
Belgium	13.4	4.7	3.6	1.1	1.0	3.0
France	13.4	3.9	4.1	0	1.1	4.3
Germany (Federal Republic)	14.4	8.1	4.5	.4	.8	.6
Italy	12.0	4.7	2.9	.6	.6	2.9
Luxembourg	13.7	6.3	3.1	0	1.8	2.5
Netherlands	12.0	5.7	3.6	.6	.4	1.7
Sweden	9.2	5.1	2.2	.2	.2	1.6
United Kingdom	10.6	4.2	5.1	.3	.3	.6
United States	4.8	3.6	.1	.7	.3	---

Source: Paper No. 7, European Social Security Systems (Washington, D. C.: U. S. Government Printing Office, 1965), p. 11.

In the Soviet Union it is difficult to separate social expenditures from other collective expenditures; however, in the Soviet Union social expenditures include those items listed in the above table and in addition such expenditures as--

complete government support of universities and technical schools
cultural and recreational facilities, i.e. theaters, vacations, health resorts
complete support of hospital and health services
supports of athletes, artists, and writers

The teacher should point out to the students that the government of the U.S.S.R. spends proportionately more and controls more in the area of social expenditures than the U. S. does.

d. The foregoing emphasized the extent of social expenditures in terms of Social Security. The intent of social expenditures may be made clearer by asking students to respond to the following questions:

[1]Old-age, Survivors, and Disability Insurance

(1) Why does government rather than private industry build roads, bridges and schools?

(2) Why does the federal government introduce such things as unemployment insurance, Social Security pensions and Medicare?

(3) Some people have suggested that the U. S. government should have nothing to do with road building, school construction or Social Security. It has even been suggested that the Post Office might be more efficiently managed (for a profit) if owned privately. What advantages and disadvantages do you see in this proposal?

(4) "The general intent of social expenditures in the United States is to provide for the general welfare when private enterprise is unwilling or unable to do so." How does this statement of intent apply to the items we have considered as social expenditures?

The discussion of these questions will most likely illustrate the fact that decisions about the extent and the types of social expenditures will depend upon influences other than economic considerations. Whether a government does or does not participate in social expenditures depends in large measure on the political and philosophical framework within which the government works. The particular economic system - whether market, planned or mixed - will influence the extent and <u>intent</u> of social expenditures. Generally speaking, the planned economies will tend to increase the amount of social expenditures and replace private expenditures while a market economy will tend to keep social expenditures at a minimum and as a supplement to private expenditures.

Note: There may be differences of opinion as to the "goodness" or "badness" of these expenditures, depending on one's political view; however, it is generally agreed that they exist partly because of a need.

THE COORDINATION OF ECONOMIC ACTIVITY

Unit 18: Economic Problems and Policies

Part I: Sequenced Outline

I. In all of the preceding units, we have been concerned with economic analysis. Concepts were grouped into three major categories and we showed how one concept unfolds into the next. Economic analysis has itself been treated as the economic problem (see comment in II below). In this last unit, we shall discuss economic problems as they are usually defined, e.g. the farm problem. Such "problems" belong to the coordination of economic activity and can best be understood as a breakdown in economic coordination.

II. Economic analysis has been presented as the problem. We have seen how one concept can be understood only by reasoning out what it means, by showing how it is related to the major category in which it is found, how the idea leads to the next one by implication or consequence. Thus, the careful unfolding of definition and relatedness of economic concepts, economic reasoning if you will, has been defined as the problem.

III. The purpose of this unit is to show how complicated economic situations, calling for policies, can be defined and choices for action can be clarified through economic analysis. We draw on what we have learned in Units 1 through 17 to help us define large economic "problems" and to suggest policies for meeting them.

A. Examples of large, economic "problems" are:

1. The Farm Problem
2. The Monopoly Problem
3. Insecurity and Poverty Problems
4. Economic Growth
5. Economic Stability
6. Labor Problems
7. International Trade Problems

B. We will consider in this unit, only three "problems"--number 1, 2, and 3 above.

1. Comments on the "problems" selected for treatment are given, in Part II of this unit, under Learning Situations.

2. The "problems" chosen for this unit can serve as models for the definition and analysis of the other problems listed above and still others which could be content for units in the semester following the presentation of Units 1 through 18.

C. An analysis of the large "problems" will make it clear that such "problems" represent a breakdown or malfunctioning of the institutions providing coordination of economic activity. The breakdowns or malfunctioning are of two types:

1. Imperfections in the operation of economic institutions. Institutions intended to coordinate economic activity may not be serving effectively the stated goals, e.g. imperfect mobility of the factors of production will hinder the allocation of the factors of production, say, matching manpower and jobs (see Unit 4, Allocating the Resources, and Unit 16, Basic Economic Decisions in Market and Planned Economies).

2. Conflicts between institutions and goals. The operation of institutions for coordinating economic activity may be in conflict with other institutions and goals.

   a. Economic: The desire for large-scale enterprise and possibly lower per unit costs may conflict with the desire for a large number of competitors as a form of economic control.

   b. Political: National interest in defense may conflict with the freedom of producers and consumers to determine what shall be done with scarce resources.

   c. Social: The desire for rapid allocation of scarce resources may be in conflict with the social need for stability of the family. Families may not want to move to new places for work.

IV. Now, how does one recognize, identify and analyze a large "problem"? How does the analysis define possible choices for policies?

A. First, we must determine that the problem exists. Economic analysis provides the concepts which enable one to detect the problem, e.g. the definition of economic growth. One could not know about the problem of an economy's growth without a definition of the concept of growth.

B. Next, the problem must be defined. The problem will look one way on the surface but analysis will usually modify or re-define the problem. Is the problem the existence of agricultural surpluses or is it the breakdown in the market system or governmental policies attempting to coordinate supply and demand?

C. Third, we must discover where and to what extent the coordination mechanisms broke down. Since large economic "problems" are examples

of malfunctioning in coordination, we must be specific about the nature and degree of the breakdown. In an appraisal of social security, one wants to know the number and circumstances of those over 65 years of age.

D. Finally, analysis helps define possible choices for policies. The three preceding steps help to define the problem but they also suggest policies. If, for example, inelasticity of demand is a major factor in agricultural demand, then we know that lowering the price will not stimulate a great increase in purchase of agricultural products.

E. A word of caution about the economic analysis of economic "problems". Economic "problems" are never entirely economic, but economic analysis can help to explore the economic elements of the situation.

V. Relation to other disciplines (illustrations)

A. Geography: A geographical element is present, directly or remotely, in every economic "problem", e.g. monopoly may depend upon the location of resources.

B. Sociology: Social institutions and goals may be in conflict with economic ones (see III above) or may serve to facilitate the operation of economic institutions, e.g. the acceptance of competition as a way of life.

C. Political Science: Political institutions and goals may be in conflict with economic ones (see III above) or may facilitate the operation of economic institutions, e.g. the court's enforcement of contracts.

D. Psychology: The definition and analysis of problems obviously has many psychological elements, e.g. conflicts in institutions and goals will have parallels in the behavior in persons, for they are the human element in the institutionalized behavior.

E. History: All of the economic "problems" have histories; indeed, periods of history often are dramatized by the prominence of one economic "problem" or another. The ability to handle the economic analysis of such problems provides insights into history and vice versa.

THE COORDINATION OF ECONOMIC ACTIVITY

Unit 18: Economic Problems and Policies

Part II: Outline of Teaching Suggestions

I. Comments on the Content

A. Problems in teaching the concept

1. Perhaps the major obstacle in teaching the concept of economic "problems" as we defined it is that the traditional view of a problem is so well established.

2. Traditionally, a problem is presented as a rather elaborate description of a situation. Facts, theories and analysis are intermingled. The goal of the presentation seems to be a sharpening of awareness but not a disciplined analysis.

3. A disciplined analysis differs from awareness because it draws upon an organized body of ideas. The goal in handling a large economic "problem" then is to make the student appreciate the usefulness of analysis rather than merely the details of a situation.

4. A second, perhaps equal, obstacle, is that we are defining an economic "problem" as a breakdown in coordination. This view requires that teacher and student have clearly in mind the concept of coordination in order to appreciate the nature and extent of the breakdown.

5. Assuming that the concept of coordination has been established and that an economic "problem" is viewed as a breakdown in coordination, then the task is to demonstrate how one draws upon the analysis presented in Units 1 through 17 to define and analyze a "problem".

B. The concept as part of the unfolding structure

1. Scarcity: In the discussion of scarcity, we emphasized that insights follow from a careful definition and that a definition becomes increasingly clearer. The same approach is being used in defining and analyzing an economic "problem". In a sense, we are demonstrating efficiency in the use of reasoning.

2. Flows: The Gross National Product was analyzed by showing that is could be broken down into either a two-fold or four-fold division. Thus we defined and analyzed the nation's income and showed the difficulties of matching the flow of goods and services and the flow of money in a manner which is consistent with

the definition of a "problem" presented in this unit. Definition helped us see the "problem" of coordination.

3. Coordination: The major objective of this unit, of course, is to make it clear that large economic "problems" are essentially a breakdown or malfunctioning of the institutions for coordination.

4. Marginal analysis: Marginal analysis emphasizes the need to be specific about a decision, e.g. the choise of using the last or marginal dollar in one direction or another. Since economic analysis has been regarded as the problem, the concept of marginal analysis illustrates that one should apply to a large economic "problem" the disciplined analysis which has been used in economic reasoning.

5. Institutions: Again, this unit has stressed that the large economic "problem" may be thought of as a breakdown or malfunctioning of institutions, either because mechanisms (the market) may not serve goals or because institutions and goals may be in conflict.

II. Comments on the Learning Process

A. Vocabulary: The different interpretations of the term "problem" are perhaps the major vocabulary difficulty in this unit. We are once again facing the complication of using a familiar word in a special, technical sense. It may seem that we could have saved ourselves some confusion had we employed another term than "problem" for Unit 18, but we wanted to stress the fact that one should have another conception of what an economic problem is than the one which is traditional.

B. Mathematical concepts and skills

1. The use of the term "problem" offers similar difficulties in mathematics. For example, one could teach rate-time-distance problems and offer many examples of them. Such a treatment is traditional and resembles the traditional treatment of economic problems. But if the student is asked to see the rate-time-distance problem as an example of direct and inverse relationship of variables, he is asked to define and analyze the surface problem in terms of a more fundamental, disciplined approach.

2. It has been often pointed out in this section that mathematical skills may turn out to be logical skills. We also stressed process as a part of logical analysis. We are consistent then when we define an economic "problem" as a breakdown in coordination, for we are saying that one must rely upon a logical economic analysis to detect, define and analyze the "problem".

C. Ability to generalize

1. Accepting the definition of an economic "problem" which we have used, we are suggesting that the student also be able to recognize the economic generalizations or analysis which he has acquired in the new and bigger economic "problem" he faces.

2. The definition of a large economic "problem" as a breakdown or malfunctioning of coordination is itself a generalization. In turn, it is based upon the generalization that economic activity needs to be coordinated. Hence, the student's ability to handle economic "problems" rests upon his previously established ability to handle economic reasoning.

D. Background

1. Students are thoroughly aware that breakdowns in coordination can occur, e.g. the electricity can go off; they may fail to bring the proper books home to study.

2. A student, wishing to use a piece of wood which must be sawed in two, would recognize that to define and handle the problem, there is a need to see the problem in terms of the tools available.

III. Learning Situations

A. From Teacher to Teacher

Throughout the preceding seventeen units we have emphasized the idea of a smooth, explicit transition from one learning situation to the next and from one unit to the next one in the sequence. This unit bears the responsibility of providing an equally smooth, explicit transition between the total course and the future educational experiences of the students. The previous attempts to describe economic concepts as part of a unified structure are now given a different kind of meaning as this body of economic understanding is applied to problems facing a society. With some courses of study the last unit or even the last few units are considered as extras. They may be enrichment units or units that are supplementary to the main intent of the course. Let us emphasize that this is <u>not</u> the case with these materials. If the students are to transfer their understanding of economic concepts to social problems, they should have the opportunity, within the course, to learn the process of that transfer.

Economics is a study of choices. We want one thing more than another. We allocate our resources in one direction rather than another. We distribute the fruits of production one way or another. Economics describes the pattern of these choices, but it does not fully explain why we make these choices. Answering the question "why" requires concepts from history, geography and other social sciences. Social

problems are not primarily economic problems or primarily geographic problems or primarily political problems; they are social problems and understanding them requires an integration of concepts from all the disciplines that have relevance to the problem. We can, however, show how an understanding of economic concepts contributes to one's comprehension of a social problem.

The first and second learning situations in this unit introduce the process of making an economic analysis of two problem areas. Some non-economic aspects of the problems are indicated but not intensively discussed. The task in each of the situations is to use economic analysis to define the problem and to suggest choices for policies. The third situation also requires the student to employ economic analysis in the definition of the problem and suggesting possible policies, but the analysis and suggestion of policies are more sophisticated. Presented with a body of facts related to income distribution and economic insecurity in the United States, the student is asked to organize and present the facts in a systematic manner.

B. Sequenced Learning Situations

1. First Situation: Agriculture--"Problems" and Policies (Student Materials, page 687)

   a. The first learning situation creates a setting for a discussion of the agricultural problem in the United States. The students may be assigned "Agricultural Abundance" as a home exercise along with the questions included in the account.

   b. The following account will serve as a basis for analyzing a present-day problem with the tools of economic analysis provided in the previous units.

Agricultural Abundance

There is a lovely song to America that refers to our "amber waves of grain," and our "fruited plain". We respond to it with nostalgic pride. Indeed, most of us have seen in the countryside field after field of hearty crops and livestock, dotted with occasional barns and small round storage bins which upon closer inspection are securely locked.

Let us now unlatch the gate to some imaginary farm that might exist near your city or your school so that we might look more closely at the economic enterprise of farming, and evaluate the condition of American agriculture.

A white picket fence surrounds the farm house, and as we swing open its gate, we remember that our purpose is to see the farm in terms of its economic role. To do this we need to have some facts. About 6% of the employed work on farms and about 3% of the Gross National Product is spent for the goods that farmers supply--food and the fibers for clothing.

Looking beyond the farm house that we are visiting, there are tractors and equipment that have made farming more efficient. The fields of wheat and corn reflect the hearty hybrid that research has made possible. Crops are taller and yields are greater than ever before. This brings to mind the fact that, on the average, one farmer can provide enough food to supply 26 people! How efficient! What could be more appropriate in our land of increasing-production and growth! This is fine <u>if</u> the demand by consumers for food is growing in proportion to the supply produced by the farmer. But it isn't. We don't need to buy that much more food. We are a well-fed nation, and as incomes increase, a smaller percentage of it goes for food.

Meanwhile, the farmer has his fixed costs for tractors, barns, seed, home, and other needs. Whether his crop is helped by fair weather, or destroyed by locusts, his costs of production are relatively fixed. His machines make production more efficient in the long run, so the food supply increases. However, consumer demand for food remains about the same. What would this situation do to the price of farm commodities? How would this condition then affect the allocation of resources that are used to produce food and fiber in the agricultural sector of our economy?

Now, if you had used your tools of economic analysis, you may conclude that an excessive amount of the factors of production have been used in agriculture and would thus be reallocated to industry.

But look at the facts: 1. What percentage of our labor force is engaged in farming? 2. What percentage of our Gross National Product goes for food and clothing? 3. How many people can be supplied by each farmer?

Now ask yourself: 1. Is there an economic problem? 2. Has the market place adjusted the resources used for agriculture by price signals? 3. If adjustment through the market mechanism had taken place, about what percentage of the labor force would be engaged in farming?

Coming back to our farm visit, let's try to see the economic consequences of being a modern machine-oriented efficient farmer.

For example: 1,000 bushels of wheat are harvested. The farmer wants to see his wheat at a price that will cover his fixed costs and provide income to maintain his standard of living. But when he takes his bushels of wheat to market, he finds other farmers equally efficient. How can he compete with them? Is his product better than theirs? No, the product is almost identical, so his crops must be a part of the total supply. The abundance of supply drives the price of wheat down. Thus, without price supports, the "poor" farmer would be <u>really</u> poor! That is, his income could be appallingly low. It would be a crisis! He could leave this industry and move to the city where his work may provide a better income. But he doesn't! You see, he loves the wholesomeness of rural living and the satisfaction of working the land. He does not have or want other skills. He probably will stay, as many farmers have stayed.

What do you think economic policy in agriculture should be? Use your economic reasoning and the facts you have gathered from this account and other materials. Then compare your solution with policies that the government has tried.

c. During the class discussion of the farm problem the teacher may wish to focus attention upon the following questions:

(1) How do we know that there is a farm problem?

(2) What is the real nature of the farm problem?

(3) Have government policies aimed at the core or merely alleviated the results?

(4) What other problems have these policies created?

(5) On the basis of our discussion, what kind of statement can be made about the relationship of economic analysis and economic policies? What is the basic difference between the two?

d. The following material is included as an aid to the teacher for the discussion of agricultural problems and the policies invoked to solve or remedy them.

The farm problem represents a breakdown in the ability of the market mechanism to coordinate economic activity. The problem is a complex one encompassing much more than economic considerations.

A story is presented for students which will provide an introduction to the farm problem. Further research will be needed in order to resolve some of the questions suggested in the student materials. In order to provide some guidance in directing student activities, some basic facts regarding the farm situation will be presented for the teacher. It is important to modify the description of governmental farm policy by watching current legislative and Department of Agriculture statements in order to keep up with present conditions.

Now, here are some important guides to the perplexing problems of agriculture:

First of all, farm problems may be divided into long-run problems and short-run problems.

The long-run problems are that farmers have produced a greater supply of food and fiber than has been wanted or demanded by consumers. The increase in supply has been brought about by improved technology, machines, conservation,

hybrids, breeding programs, rotation, and fertilizers. During World War II, the demand for food was geared to a wartime economy. The foreign demand was abnormally high, causing prices to rise. Following the war, the demand for food declined and prices fell. But lower prices did not stimulate a greater use, since the demand is inelastic. Moreover, the demand for these products did not rise in proportion to the later increases in buying power (income). Thus the percentage of the Personal Consumption Expenditure used for agricultural purchases declined.

This situation of over-supply would cause prices to fall. If the market mechanism were allowed to operate freely, the fall in prices would theoretically cause the reallocation of human resources (farmers) into other enterprises. However, the reallocation has been slow (immobility). (See Unit 4, Allocating the Resources; and Unit 16, Basic Economic Decisions in Market and Planned Economies.) Farmers have not left the land for a variety of reasons. Thus declining food prices have caused a low-income problem.

This description is greatly simplified for the sake of clarity. But it is difficult to "freeze" a contemporary problem in a moving, dynamic world. So here are some of the factors that have affected the farm situation.

There is a disproportionately high degree of influence exerted by farm groups in the state legislatures and Congress. Groups such as the Farm Bureau, National Grange, or Farmer's Union have acted as though they speak for <u>all</u> of the farmers. Actually, they tend to represent the wealthier farmer rather than the marginal producers of the South and West. Forty-four percent of the farmers produce about ninety percent of farm output. The relationship of the other fifty-six percent to poverty programs such as Appalachia reflects the low-income problem, but has not been met with effective remedies. The national organizations have lobbied for government aids of various types to intervene on behalf of the farmer. They argue that agriculture is a fundamental institution whose prosperity is essential to the equilibrium of the total economy. They focus upon the short-run problems of agriculture as well.

Short-run problems stem from such events as floods, droughts, insect damage in some years, and bumper crop production in other years. Thus, the farmer has limited production control which causes hardships not felt by other industries. Both prices and incomes are unstable because of these deviations, and the many competitive, independent producers are helpless in the face of these fluctuations. Farm interests argue that they are unusally vulnerable to changes in supply and demand because they sell in markets that are

relatively competitive while they must purchase the factors of production (machines, labor, etc.) from less competitive industries.

The main consideration of the farm groups has been to raise the levels of farm income, rather than resolve the basic problem of the misallocation of resources.

Extensive government intervention in agriculture was initiated in 1933 with the passage of the Agricultural Adjustment Act. The goal of this policy was economic justice for the farmer. The means chosen attempted to raise farm incomes by supporting farm prices. During the depression, farm prices had declined more than the prices of non-farm products. While the producers of non-farm products had adjusted more readily to the change in the value of the dollar, the farmers found that their purchasing power as well as the size of their incomes had declined. In short, the real income (purchasing power) of farmers had declined relative to the real income of persons engaged in non-farm production. The concept of "parity" prices was introduced in an attempt to redress this imbalance. It was thought that if farm prices were artificially supported at the same level as existed in some previous year before the imbalance, then the purchasing power of the farmer's income would be maintained.

These artificial supports allowed the farmers, especially the larger farmers, to accumulate capital which they used to purchase modern technological equipment. The use of the new equipment stimulated a tremendous increase in farm production.

These policies led to the problem of surpluses. The government buys at support prices what consumers do not demand at a given price or the farmer may store the surplus and receive a government loan equal to the value of the crop. As a result, surpluses of farm products are owned by the government. These surpluses dramatically illustrate the problem of misallocation. Consumers don't want the product, and the government must pay the cost of storage.

Several solutions to the problem of surpluses have been suggested or tried. These are possible debate questions for classroom use.

One solution might be to <u>dump</u> the surplus on foreign markets. But this would have an effect upon world market prices causing ill will abroad, as well as at home, where the price is comparatively higher.

Another solution has been the Food for Peace Program which is a type of aid to underdeveloped countries, a program which has had some positive benefits in foreign relations.

A third approach has been domestic programs such as the School Lunch Program and the Food Stamp Plan. These programs have been beneficial, but they have not been on a scale large enough to make much more than a dent in a huge problem.

There is the possibility of simply destroying the food. However, the public resents such measures because it is wasteful and callous in relation to the needs of hungry people both at home and abroad.

Another solution has been an attempt to restrict farm output. An example of this governmental policy would be the Soil Bank Program of 1956. The government rents land from the farmer in order to keep it out of production. The idle land may be planted with a cover crop or timber. Here again, a seemingly good idea has not met with much success. The farmer retires his poorest land; he cultivates his other fields more intensively; with the good growing conditions that have prevailed, he continues to over-produce.

Surpluses may continue to grow. Policies to "solve" the farm problem are still needed. Students may evaluate policy by further reading from such sources as:

Hathaway, Dale E. Problems of Progress in the Agricultural Economy. Chicago, Illinois: Scott, Foresman & Co., 1964.

McConnell, Campbell R. Economics: Principles, Problems and Policies. 2nd ed. New York: McGraw-Hill Book Co., Inc., 1963, pp. 606-626.

In conclusion, the fundamental problem is the misallocation of resources between agriculture and the rest of the economy.

2. Second Situation: Monolopy (Student Material, page 688)

   a. The problem of "monopoly" among business firms is the second opportunity for students to apply the tools of economic analysis both to a contemporary economic problem and to their knowledge of American economic history.

   b. The following account will serve as a basis for analyzing the monopoly problem with the tools of analysis provided in the previous units. The story of the growth of monopoly, already familiar to the students in their history courses,

will enable them to take another look at monopoly and with deeper insights contemplate the choices of policies with regard to the present-day monopoly problem.

So Big

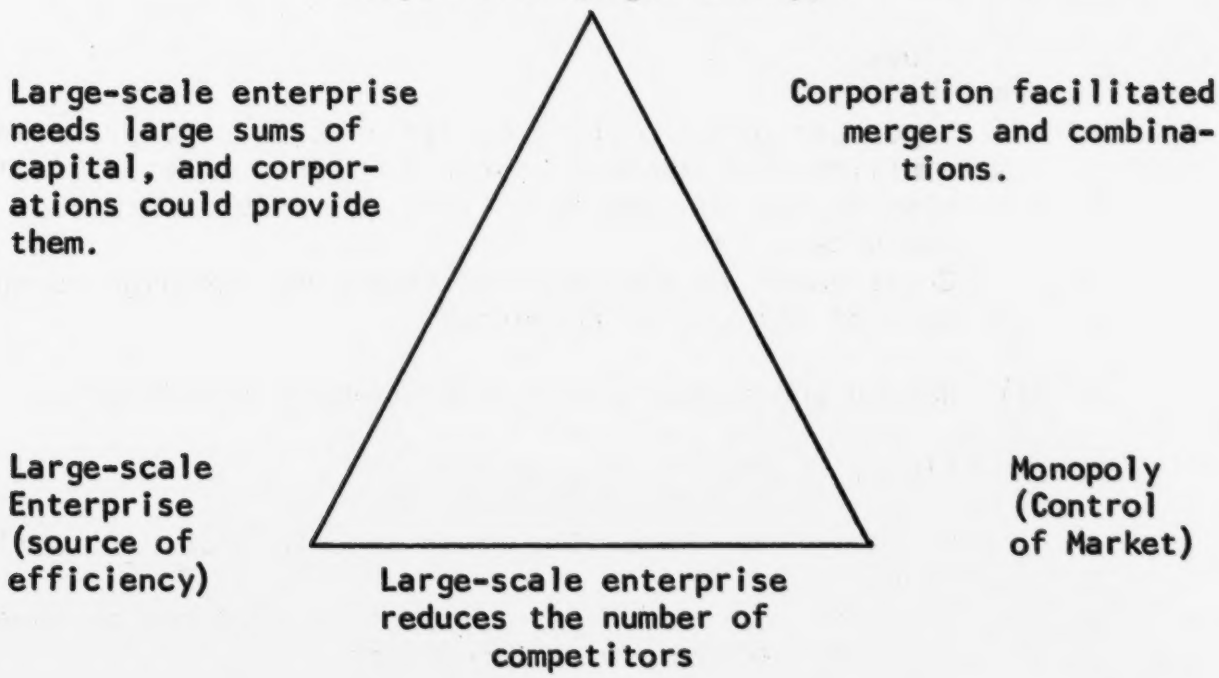
Have you ever stopped to compare the amount of goods and services available to you today with the amount that would have been available a hundred years ago? There is an enormous difference, and it all really got started in the United States about a hundred years ago.

Before and after the Civil War, the Industrial Revolution in the United States increased its pace. New machines and tools led to faster and more mechanized production. Local markets were too limited for the machine. Improved transportation provided new opportunities for business. A firm in the Midwest could sell its products in San Francisco or New York. The small home workshop which relied upon careful, slow, hand labor gave way to the factory and mass production methods.

You know about the inventions of Eli Whitney, Alexander Graham Bell, Thomas Edison, but there were a host of others. There were also those who were on the frontiers of business expansion because of their industrial leadership (e.g. Henry Ford) and financial leadership (e.g. J. P. Morgan and John D. Rockefeller.) Advances in technology and abundance of resources and drive brought new dimension to American life. But not without its problems!

"Bigness", as we know it today, provides us with the highest "standard of living" in the world. But let us think about it! How are bigness and standard of living related? What factors caused our economy to grow? What economic tools do we need to analyze and measure our economic growth? How do we benefit from large-scale enterprise?

Now, the gains from large-scale enterprise have to be weighed against another closely allied development--the growth of monopoly. What prompted the growth of monopoly? There are three major reasons, all of them related to each other, and illustrated from the following diagram:


Corporation (legal set-up)
Large-scale enterprise needs large sums of capital, and corporations could provide them.
Corporation facilitated mergers and combinations.
Large-scale Enterprise (source of efficiency)
Monopoly (Control of Market)
Large-scale enterprise reduces the number of competitors

As the diagram indicates, large-scale enterprise may reduce the costs per unit, but it may also reduce the number of competitors. The corporation provided the capital but also facilitated the growth of monopoly. Now, with this help, think again of the history of the United States prior to the Civil War and afterwards. Review the growth of railroads and other forms of transportation, the immigration of skilled workers, and the continuous uncovering of America's resources. Remember that the giant corporations did not suddenly appear. They evolved from simpler types of business organizations, e.g. individual proprietorships and partnerships. But for the reasons indicated, corporations made possible both large amounts of capital and control of the market. Finally, as it became clear to the American people that they must try to handle this complicated problem, the economic role of government with regard to monopoly increased.

Drawing on illustrations from American History, let us ask ourselves some important questions about monopoly in the United States and then use these questions and answers to help us with the analysis of monopoly today and possible policies for handling the problem.

(1) How did we know that the problem of monopoly existed and that it exists today?

Clues:

Scarcity and the satisfaction of wants.
Lower per unit costs and control of quantity produced.
Lower per unit costs and possibly higher monopoly prices.

(2) What is the monopoly problem?

Clues:

Lower per units costs from large-scale enterprise in conflict with monopoly control of the market. Limitation on the consumer's ability to influence the use of resources.
Great power in the hands of those who, through monopoly, control the use of resources.

(3) Nature and extent of the breakdown of coordination

Clues:

Forces in economic life which tend to reduce competition.
Products that possibly could not be produced as cheaply if we had many small producers.

(4) Policies for handling monopoly

Clues:

The help from Units 1 through 17 in understanding the monopoly problem.
The different perspective one gets in studying American History with economic understanding.
Policies which might have been possible if people had known earlier what we now know about economics. Policies of government inhibiting or promoting monopoly.

c. The following material is presented for the teacher as a supplement and introduction to the students materials provided in story, "So Big", which is an account of the growth of monopoly in our industrialized and complex society.

In Unit 16, the term monopoly was reserved for the market situation with a single supplier. In this unit, the term is modified to include monopolistic competition, oligopoly and monopoly, grouped under the general title of "big business". Big business, as we saw in the diagram, is a triangular relationship of corporate legal form, large-scale enterprise in production, and a substantial control of market supply.

The conflict involved in evaluating monopoly is that large-scale enterprise may provide the benefits of mass-production and low per item cost, while it gives the private monopolistic control of the market both in prices and quantities. The consumer may, thus, be deprived of his role in influencing the allocation of resources by his dollar vote in the market place.

Arguments both "for" and "against" monopoly will help the students to measure the mixed blessings of bigness. These arguments are summarized:

Advantages of monopoly

Large-scale enterprise provides the economies of scale, e.g. mass production may lower the cost per unit and make more goods available at lower prices.

Technological advance and innovation require the investment of large funds for research which only big business can finance.

Large-scale business stabilizes the economy because investment allows for long-run planning insulated from short-run business cycles.

Some industries which appear monopolistic actually have "workable competition". That is, all products are competing for dollars, and the purchase of one product (such as a new TV) may substitute for another product (such as a motorcycle). Products, too, may be substituted so that there is competition between plastic, steel, and aluminum products.

Business leaders feel a social responsibility bolstered by a respect for consumer demands and the reputation of their product. They usually do not wish to abuse their power and incur public resentment or government regulation.

Judged on the basis of performance rather than market structure, big business provides efficient production, price benefits and technological improvements which are enjoyed by the consumer.

Disadvantages of monopoly

The basic economic problem related to monopoly is again the misallocation of resources leading to a breakdown in the coordination system. If a single producer controls the supply of a given product (output), he may withhold the product and increase the price. Thus, consumer demand does not cause a producer response which would permit the allocation of more resources to the wanted good. The monopolistic producer also would have more power to determine the prices he would pay for the factors of production because he would have no competitive producers who might pay a higher and more equitable price.

The monopolist may achieve a profit reward which is so great that the inequality of income, compared with the contributions of the other factors of production, is disproportionate.

Without the spur of competition to improve and up-grade products in response to consumer demand, the monopolist may become inefficient.

The monopolistic enterprise may be able to exert tremendous influence over governmental policy because of control of output and financial power. This, in turn, might alter the course of our political as well as economic institutions.

Many corporations are larger than is necessary to maintain mass-production economies. This can be shown in industries where relatively smaller firms exist successfully (e.g. Jones and Laughtin Steel as compared with U. S. Steel). Medium-sized firms could be just as efficient.

It is possible for a monopolistic firm to own all of the raw material (such as de Beers owns the diamond mines of Africa) and prevent the entry of new producers.

A monopolist may put undue pressure on banks to withhold credit from new firms.

The power of a private business to manipulate output and price has, at various times, led to the exploitation of consumers, workers, farmers and other groups. Although our high standard of living is largely due to the yield of low-cost mass production provided by big business, it was inevitable that some regulation by government would occur, since the market place was not making economic adjustment which led to stability, fairness and growth (see Unit 17, Economy and Government).

Government Policy

A major purpose of governmental intervention in business has been the maintainance of competition. Our system rests upon the notion of free markets and competition. Monopolistic giants appear to threaten this belief. The policies of the government have sometimes promoted and sometimes restrained monopoly.

The relationship of government and business is enormously complex. Students may find up-to-date news items to document the ambivalance of government and business toward one another. But the most striking fact is that government and business are so overlapping and interdependent that a price rise, or a production increase, or some sudden economic adjustment immediately precipitates reactions from the President and the Congress.

The following charts summarize for the teacher some of the major landmarks of governmental policy relative to the monopoly problem. The teacher may wish to assign students the responsibility of filling in all or a portion of the chart outline included in the Student Materials. Students may refer to a standard U. S. History text for information needed to complete the chart. Other specific aids include:

Caves, Richard. American Industry: Structure, Conduct, Performance. New Jersey: Prentice-Hall, 1965.

McConnell, Campbell R. Economics: Principles, Problems and Policies. New York: McGraw-Hill, 1963.

Chart I: Legislation Designed to Promote Private Monopoly for Public Benefit

Policy	Purpose	Brief Definition	Effect
Patent Laws, 1790	Incentive to new products, invention	Gives 17 years protection to make and sell product	Barrier to entry of new firms; encourages monopoly by 17 year protection and entrenchment
Interstate Commerce Act, 1887	Made railroads regulated monopolies for public benefit	Interstate Commerce Commission regulates rates, and quality and uniformity of services. (Later extended to air transportation, electric power, radio and TV)	Protects "natural monopolies" such as public utilities: where fixed costs are high, service is necessary to the public, and duplication would be wasteful.
Emergency suspensions of anti-trust legislation	To facilitate production	Met emergency economic demands of wars and depressions	Monopoly power enhanced

Chart II: Legislation Designed to Inhibit Monopoly Growth and Preserve Competition

Policy	Purpose	Brief Definition	Effect
Sherman Anti-Trust Act, 1890	Maintain competition	Made monopoly & "restraint of trade" illegal	Court interpretations weakened enforcement
Clayton Act, 1914	Maintain competition	Clarified Sherman Act, e.g. outlawed price discrimination	Slowed monopoly growth, but did not restore competition
Federal Trade Commission Act, 1914	Prevent loss of competition	Five-man board could hold public hearings and restrain economy abuses	Courts have final authority, so it has become a "watchdog" agency
Robinson-Patman Act, 1936	To prevent price discrimination in favor of large buyers	Federal Trade Commission determines limits for discounts on quantity sales	Tended to stop chain stores from destroying local competition. Reduced the vigor of price competition
Celler-Kefauver Anti-Merger Act, 1950	To prevent mergers from becoming monopolistic	This act amends Section 7 of Clayton Act regarding monopolistic mergers. Put "teeth" in Clayton Act	Mergers, which lead to newly merged firm controlling 15% of market, have been blocked.

Chart III: Other Instances of Government Action Relative to the Monopoly Problem

Policy	Purpose	Brief Definition	Effect
Government Defense Contracts	To provide for national security	Business agreements between U. S. Government and private industry	Public expenditures now account for at least 20% of Gross National Product
Protective Tariffs	To protect U. S. industries from foreign competition	Taxes on foreign imports which raise prices and give domestic goods an advantage	Stimulates domestic industries but leads to imposition of foreign tariffs on U. S. exports
Depletion Allowances, Tax policy	To provide increased funds for research and development of mineral resources	Oil companies provided with higher depreciation allowances	Increases availability of petroleum and other mineral resources. Leads to higher depreciation allowances in other industries
Standard Oil Trust Case, 1911	To reduce the monopolistic control of prices and resources by Standard Oil Co.	Standard Oil exerted a kind of power that threatened our free competitive system.	Application of existing anti-trust legislation which leads to new anti-trust measures.
Electrical Equipment Case, 1961	To restrain private industry from taking advantage of government contracts	Some electrical companies joined in secret agreements to fix prices.	Misallocation of resources. Public displeasure at misuse of monopolistic powers

3. Third Situation: Poverty and Insecurity (Student Materials, page 695)

   a. Another example of a problem area is that of economic poverty and insecurity. Once again the stress is upon the use of the tools of economic analysis to define the problem and to consider policies which are offered as resolutions of the problem.

   b. In this third example of a problem area, a more formal process of investigation than was used in the first two examples is illustrated. There are two equally important aspects of

this learning situation. First, the presentation of a body of facts related to income distribution and economic insecurity in the United States. Second, the process of collecting, organizing and presenting these facts in a systematic manner. The phrase in a systematic manner is the key to understanding the main objective of this learning situation. Many books have been written on the process of scientific investigation in the social sciences; implicitly or explicitly each contains an outline of that process. We present a model not the model of the process. Students (we are all students in the sense intended here) who become involved with the process of scientific investigation will probably develop their own outline of the process. The outline presented below is a theme on which many variations can be written - it is not a rigid series of steps to be slavishly followed.

One Model for Scientific Investigation in Economics

I. Statement of the Problem

A. The values held by a society set the objectives of the economic coordination.

B. A full understanding of the problem includes a specific identification of the nature and extent of the breakdown in coordination. In what way does economic analysis help us to see the breakdowns in coordination?

II. Previous "Solutions" of the Problem

A. What historic or contemporary policies have attempted a resolution of the problem?

B. What kinds of evidence lead you to support or reject previous policies?

III. Constructing New Alternatives

A. What modifications in previous policies would you suggest?

B. Would you suggest an essentially new policy?

IV. Evaluation of New Alternatives

A. What kinds of evidence will lead you to support or reject the new alternatives?

B. What new measurement techniques are needed to test these new alternatives? (e.g. perhaps, existing collections of information do not yield the kinds of data needed to test the new alternatives. How would you go about collecting the information you need to test your hypotheses?)

The discussion of the use of this model in the learning situation will be taken up in a moment. The situation may be introduced by asking the students what the words poverty and economic insecurity mean to them. Ask them to complete the statements: 1. Economic insecurity is _____. 2. Poverty is _____. This may lead to some disagreement among students about the best definitions. The teacher should keep in his mind the theme of the discussion which should be:

(1) that economic insecurity is a more general expression referring in its fullest conception to all members of a society while poverty is more limited in its scope referring to a relatively smaller segment of the population.

(2) that poverty is a relative term when used to describe several nations. The economic condition of impoverished persons in the United States may even be considered a condition of affluence in other nations.

(3) that since the word poverty is open to so many individual interpretations, an analysis of the condition of poverty requires a consensus on some objective definition.

The teacher may bring this discussion to a close by giving the definition of poverty used by the President's Council of Economic Advisors:

> "As a rule of thumb, the Council considers a family poor if it has a before-tax annual income of $3,000 or less at the 1962 price level. An individual living alone would be poor with $1,500 or less."[1]

We suggest that the students first engage in a study of the problem of poverty and later generalize what they have learned to the more inclusive problem of economic insecurity. The first reading of the pamphlet The New Poverty, published by the Federal Reserve Bank of Philadelphia, should now be assigned with the question: What is the poverty problem in the United States?

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[1] The New Poverty. Series for Economic Education, published by the Federal Reserve Bank of Philadelphia, September, 1964, p. 5.

The New Poverty[2]

When the country was young, a man's standard of living depended in large measure on his skill, initiative, strength and wisdom. With his "good right arm" he wrested a living for himself and his family from forest, field and stream.

The attitude prevailed that poverty was "God's judgment against the undeserving." Poor people consoled themselves with the thought that riches would come if only they made themselves more deserving - if only they were able to work harder and develop more wisdom. Although most people were poor and remained so, they had hope. They also had Mother Nature to provide them with fish and game, free for the taking.

Then the virgin woodland was cut down and in its place sprouted a thicket of smoking factories. Before long a man's standard of living came to depend, not only on his skill, initiative, strength and wisdom, but also on an incredibly intricate mechanism of assembly lines, offices and stores to provide him with the opportunity to work.

Although the American economy made great strides, progress was not steady. A crisis occurred in the 1930s and strong right arms by the millions were reduced to reaching for doles of thick bread and thin soup. Workers, who had lost the ability to achieve economic security by individual action, sought it collectively through large unions and strong governments. Programs such as Social Security, Unemployment Compensation, relief and public welfare helped many escape the hobnailed heel of want. The continuation of such governmental activities is thought by many to be one reason why we have avoided major depressions and improved the lot of the poor over the last 20 years.

Another reason, perhaps more important, is the technological revolution that was nourished so effectively by World War II. New methods and machines have increased the productivity of American workers tremendously in the space of a few decades. Able to produce more, most of us have been able to buy more and the general standard of living has risen to a level that our grandfathers never even dreamed of.

Living With Change

It's ironic, but the technological revolution which opened the door to prosperity for the majority, also slammed that door tight shut in the face of a sizeable minority. The essence of the revolution is change - accelerating and pervasive change. Not only has the way we produce goods in our factories undergone sweeping change but so has the way we sell groceries, teach school, heal the sick, and raise crops, to give but a few illustrations.

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[2] Ibid., entire pamphlet.

As the revolution progressed, some workers were not able to keep pace with change. Maybe they were too old or too set in their ways, maybe they ranked low in mentality or had been denied an adequate education. For one reason or another they lacked the inherent flexibility to adjust to the fast changing conditions in the labor market. As a result, the wave of affluence began to sweep by leaving them and their families in eddies of poverty.

The Disadvantaged

The "new poverty" of the postwar period usually struck people who were at some disadvantage. Negroes, for example, were especially hard hit. One reason was that they were afflicted by the disadvantage of discrimination, which often denied them the opportunity for a good education and job training.

Another disadvantage is the lack of a male breadwinner. According to the definition used by the President's Council of Economic Advisors (see below), about 50 per cent of broken families are poor compared to 20 per cent of all families. The mother, who suddenly is forced to support her family, probably lacks the skill necessary for a high paying job and she also may encounter some salary discrimination against women.

One out of every two families headed by a person 65 or older, is poor, as defined by income alone. A major disadvantage here is being old at a time when employers seem to put a high premium on youth. To make matters worse, many people, now retired, were at the peak of their earning power during the Depression and probably missed the opportunity to build up a normal nest egg.

Over 45 per cent of all farm families are poor. Among their disadvantages is the rapid increase in agricultural productivity which has made it extremely difficult for the small farm to compete with the large business-like endeavor. Although many poor farmers have given up and gone to the city, many others still continue to eke out an existence on a few barren acres.

About a third of the people who live in the Appalachian highlands are poor. One of their principal disadvantages is the decline in mining employment, which came about as coal users changed to other fuels.

We do not mean to give the impression that all the causes of the new poverty are beyond the control of the individual. (Some are racial discrimination, for instance.) But a disadvantage such as inadequate eduction often is the result of a voluntary, if misguided, dropout from school. Many old people may be poor because they squandered large incomes unwisely in younger days. Others may endure poverty because, for many understandable personal reasons, they find it difficult to break deeprooted ties to a depressed town or area.

The Quicksand Effect

As the post-World War II period progressed, people who sank in the quagmire of poverty found it increasingly hard to get out. The technological revolution was eliminating many of the manual jobs that once were the first rung on the ladder up to comfortable, middle-class living. Those unskilled tasks that remained rated low wages and low prestige. Thus, it became harder and harder to escape poverty.

The poor felt trapped by forces they didn't understand. No longer did they believe affluence was obtainable if only they worked harder and developed more wisdom. They tended to become discouraged and demoralized; they lost the hope which had made low living standards more bearable for their forefathers. Without hope, many were unable to take the first difficult steps of self-improvement that led out of their particular poverty pocket.

As time went on and the majority of the nation enjoyed its postwar prosperity, the poor became increasingly isolated from the mainstream of American life. They led shadowy lives in the slums so near but yet so far from the city's business heartland. They huddled in tarpaper shacks over the hill and out of sight from the turnpike that took happy suburban families to their mountain vacations. As Michael Harrington said in his book, "The Other America," poverty existed in an "invisible land."

How Much Poverty?

There is no way in the world to say with certainty that one family is poor and another is not. Poverty is both relative and subjective. It depends on many things including family size, age, assets held, climate, consumer price levels, the opportunity to grow food and so on. A retired couple owning a small farm in the South might feel well-to-do on an income that would mean extreme privation for a Philadelphia family with five small children.

The period in history makes a difference, too, because we are constantly upgrading our definitions of poverty. People who are considered poor today might have qualified as almost-affluent 50 to 100 years ago.

Poverty means something quite different in other parts of the world. By American income standards 75 per cent of all families in England might be classified as poor. Indeed, many nations in Africa and Asia would be delighted if they could raise their <u>average</u> standard of living to that of our poorest people.

Acknowledging the difficulties involved, the President's Council of Economic Advisors has made an attempt to define poverty in terms of monetary income. As a rule of thumb, the Council considers a family poor if it has a before-tax annual income of $3,000 or less, at the 1962 price level. An individual living alone would be poor with $1,500 or less.

Using these admittedly imprecise standards, about one-fifth of our population, or between 33 and 35 million people, is poor today. With adjustment for changes in the cost of living, about a third of the nation was poor in 1950.

Out of the Shadows

Harrington's "The Other America" was published in 1962. Since then the new poverty, if not the poor themselves, has become highly visible and, with the help of the mass media, virtually impossible to forget.

A number of factors combined in the last year or two to draw the nation's attention to its poverty. Harrington's book played a part in the awakening and so did other books, articles and speeches. In addition:

- Underdeveloped nations in Africa and Asia have recently received increasing publicity because of their birth pains and the heightening controversy over our foreign aid programs. Possible better knowledge of poverty abroad has caused us to notice it more at home.

- Poor people are becoming a more important political force as traditionally poor minority groups begin to flex their voting muscles. In addition, reapportionment should give urban slum dwellers more political representation, at least in state legislatures.

- Because of its prevalence among Negroes, poverty is bound up with the civil rights issue. The spotlight on the latter undoubtedly has helped illuminate the former and vice versa.

- As the nation has grown more sophisticated in the matters of business and finance, the economic costs of poverty became more widely known. Not only does poverty mean a waste of potentially productive human resources but it places a heavy monetary burden on our various governments. As a nation, we have long since decided that we can't let people starve, so society undertakes to provide some sort of basic subsistence for our poor people. Furthermore, the country as a whole must pay huge sums to combat the unusually high rates of crime, disease and delinquency that poverty breeds.

- Some of the recent concern over poverty could have been caused by a developing guilty conscience on the part of the affluent majority. In the latter 1950s, critics intensified their complaints about American materialism, as epitomized by the automobile tail fins and other goodies. As in prior periods, this criticism didn't seem to diminish the national desire for material possessions, but it might have sharpened our concern for the less fortunate.

- Finally, the nature of the new poverty seems to have attracted widespread attention to itself, once it was illuminated. Thinking citizens have become alarmed at its pernicious effect. Many children, growing up in the demoralized environment of our rural and urban slums, soon abandon hope as their parents did before them. This makes it extremely

> difficult for young people to do what is necessary to escape - to stay in school, for instance. Thus generation after generation may be doomed to live out their lives in poverty. Although the physical health and sartorial appearance of the poor has improved steadily, their mental attitude seems to deteriorate with each turn of this vicious, self-generating cycle. As a result, the poor fifth tends to become a greater danger to the confortable four-fifths of the nation. Already the bitter fruits of the new poverty are alarming Government officials and private citizens alike. Juvenile delinquency, crimes of violence, riots and other disorders often linked with poverty are on the increase. More important is the way the poor might wield their increasing political power. Are they likely to continue to support an economic and political system that they feel gives them little chance, or will they fall for the siren songs of those who would destroy democracy?

For reasons such as these, the new poverty has attracted the attention and concern of the nation. In the space of a few years it has become a major economic, social and political issue. Most people now admit something should be done to combat poverty and all its dangerous side affects. They agree with the great physician, Moses Ben Maimon, who said in the Twelfth Centruy-A.D.:

> "Anticipate charity by preventing poverty; assist the reduced fellowman, either by a considerable gift, or a sum of money, or by teaching him a trade, or by putting him in the way of business, so that he may earn an honest livelihood, and not be forced to the dreadful alternative of holding out his hand for charity."

Action - But What Action?

Some analysts hold that governmental "interference" has slowed the expansion of the private economy. Reduce this interference, they say, and the economy will grow faster, thereby creating more jobs for the poor.

On the opposite side of the fence, it is claimed that the new poverty is such a complex problem that only a strong central government can cope with it. This group splits when it comes to specific action, however. One school believes that the Federal Government should spend more or cut taxes in order to increase the overall demand for goods and services. This extra demand, in turn, is supposed to create new jobs for unemployed workers.

The other school says that the real problem is that modern technology has eliminated forever many of the jobs for which poor people can qualify. These analysts call for more specific governmental action, aimed directly at the causes of poverty. They believe Government should help unemployed workers qualify for the jobs that are available. Included in this category are beefed-up training and retraining programs, better nationwide information on job opportunities, allowances for workers willing to move to other areas, an efficient system for trading-in used housing and anti-discrimination laws. Although sometimes thought to be necessary palliatives rather than lasting cures, such programs as unemployment compensation and aid to depressed areas generally are considered specific actions.

Then there are those who advocate both government action to increase overall demand and specific programs as well.

There is No Free Lunch

Desirable as it might be to eradicate poverty once and forever, all the proposals commonly put forth involve heavy costs and serious risks. And, as we indicated earlier, so does doing nothing at all.

If the nation decides that reducing governmental "interference" is the best course of action, the risk is that the private economy may not respond as hoped. In fact, many experts believe that sharply reduced governmental spending could cause the nation to crumble into a depression like the one in the early 1930s.

Federal Government spending, abetted by Federal Reserve action to keep credit cheap, probably could pump up overall demand enough to create a job for almost every worker, no matter how unskilled or inflexible. Massive federal purchases of munitions in World War II required the services of virtually everybody including "the lame, the halt, and the blind." The risk, of course, is that such an infusion of demand today would leave a legacy of inflation as it did after World War II. Inflation can dislocate the entire economy, hurting poor people in particular, because they have relatively little bargaining strength in regard to wages.

Specific governmental programs, if well-conceived and executed, might strike effectively at the causes of the New Poverty. Their cost, however, could be a reduction of individual freedom and private initiative. Some European nations, which have all but eliminated poverty, have found that their programs are not very effective if participation is voluntary. As the Harvard Business Review points out ". . . some freedoms may be more important in the long run than freedom from want on the part of every individual . . ."

Conclusion

It goes without saying that a prosperous, growing economy is essential to the reduction of poverty. It is clear, too, that in some areas specific measures can be helpful. Indeed, the nation is already committed to full employment policies and numerous anti-poverty programs. The next steps, if any, depend on the careful balancing of goals and risks by an informed electorate and its representatives.

After the students have read The New Poverty, the teacher should initiate a discussion on the process of systematically investigating an economic problem. We suggest a brief lecture in which the teacher develops either the model of the process we suggested or one of his own design. We have now given the teacher a pedagogical problem. He should be well aware, that by adding the theme of systematic observation to the existing theme of poverty, he is asking the students to follow two trains of thought simultaneously. The success of this learning situation will depend on the

teacher's skill in combining the two themes into a harmonious synthesis.

Phase One

An early phase, if not the first phase, of any design for systematic investigation will be the statement of the problem to be studied. The major portion of The New Poverty is a statement of the problem of poverty. It gives a statement of the pertinent social goals of our society and it points to places where the coordination system for reaching those goals has broken down.

The first reading of The New Poverty should have given students an overview of the problem of poverty. Because of its simplicity its use is limited. Before we can move to the next phase of systematic investigation, therefore, this simplified statement of the problem must be translated into the more precise language of the economic concepts studied previously. e.g. Several paragraphs in The New Poverty are used to state the idea that the immobility of a significant segment of our human resources keeps us from fully utilizing the potential capacity of this factor of production. Another group of paragraphs are used to show that the low income levels of this segment of the population reduces the effective demand for goods and services. Still another set of paragraphs point out that this reduction in effective demand in turn hinders the economic growth necessary to create enough jobs to more fully utilize the potential capacity of these human resources. Finally, a fourth group of paragraphs are used to indicate the social costs that stem from an inefficient use of human resources.

By using the above mentioned analytical concepts, we can state the problem of poverty concisely. This concise statement allows us to see the interrelationships involved in the problem and provides a basis for evaluating and creating policy. The transition from the first to the second phase of systematic investigation, therefore, requires the student to be able to state the problem of poverty in terms that more readily lend themselves to economic analysis. The teacher should demonstrate with the following paragraph the difference between an analytic and a journalistic statement of the problem.

The increasing elimination of the need for certain kinds of labor by the acceleration of technological change has led to a condition in which a significant number of persons in the U. S. are trapped by their inability to adapt to the rapid changes. This inability or unwillingness to adapt to change has resulted in the immobility of a significant portion of our human resources. This immobility has resulted in a lower income level for the persons involved which in turn reduces the effective demand for goods and services.

The resulting loss of effective demand retards economic growth which in turn reduces the number of new job opportunities. The cycle is completed when one realizes that the reduction in new job opportunities contributes to the immobility of the impoverished.

The analytical statement of the problem given above locates the points where the coordination system has broken down and gives us criteria for building and evaluating alternate policies aimed at a resolution of the problem. With this frame of reference it becomes evident that a repair of the breakdown requires a policy that will simultaneously increase the mobility of the impoverished, provide a maximum of economic growth with a minimum of instability of prices and wages and stimulate the creation of new job opportunities. The journalistic statement of the problem in The New Poverty, while serving as an excellent introduction to the topic, did not give us a set of criteria for building and evaluating policy.

Phase Two

We are now prepared to move into the second phase of our systematic investigation. Here we ask what historic or contemporary policies have been adopted in an attempt to resolve the problem. We suggest that the students be assigned the task of finding out through their own search what policies have been tried or are being tried as resolutions of the problem. A high school text in United States history will usually prove to be a suitable source for this information. Other books such as:

Bremner, Robert H. "Poverty in Perspective," in Change Continuity in Twentieth-Century America. Edited by John Braeman, Robert H. Bremner, and Everett Walters. Columbus, Ohio: The Ohio State University, 1962, pp. 263-280.

_____. From the Depths: The Discovery of Poverty in the United States. New York: New York University Press, 1956.

Gordon, Margaret S. (ed.) Poverty in America. San Francisco, California: Chandler Publishing Co., 1965.

Harrington, Michael. The Other America: Poverty in the United States. Penguin Special (paperback). New York: MacMillan, 1964.

Schonfield, Andrew. The Attack on World Poverty. Vintage (paperback), 1962.

and current issues of the Economic Report of the President and the Council of Economic Advisors and The Manpower Report may be available in local libraries and would provide a more extensive enumeration and treatment of the problem.

An example of the kind of policies that the student may find are:

(1) Old Age, Survivors, and Disability Insurance Act

(2) Manpower Development and Training Act

(3) The Economic Opportunity Act

(4) The Area Redevelopment Act

Now that policies have been identified we must establish a design for evaluating their effectiveness. We can divide the policies that the students have enumerated into two groups. The first will include "stop gap" measures (e.g. unemployment compensation and relief) which provide assistance to the poor without changing the causes of their impoverishment. The second group will include "long range" measures aimed at removing the causes of poverty. An investigation of the second group of policies shows that even though they all aim at removing the causes of poverty some measures are more effective than others. The evaluation of the policies thus becomes a judgment of their relative effectiveness, which in its turn depends upon the kind of evidence about effectiveness which we are willing to accept. Previously we stated these criteria as the basis for evaluating policy:

(1) Does the policy increase the opportunities for mobility among the impoverished?

(2) Does the policy help to create new job opportunities?

Take for an example the program recently initiated by the Equal Opportunities Act. Although it is too early to make a judgment on the effectiveness of this policy, we can make a decision about the kind of evidence of effectiveness that each of us will accept. Have the students ask themselves - what evidence would lead me to accept or reject the Equal Opportunities Act as an effective measure in reducing the problem of poverty in the United States? The writing of this response may be given as an individual home assignment or as individual class work.

An example of a response that could be considered as being within the rules of evidence is illustrated in the following instance:

If 50,000 persons with families who had previously been earning less than $3,000 per year took advantage of the programs of the Equal Opportunities Act and 20,000 of them are now earning over $3,000 per year and 50% of these 20,000 persons have increased their income by a $1,000 or more, then, even at the cost of one million dollars of tax money, I would consider the Equal Opportunities Act to be a relatively effective measure.

It is extremely doubtful that any student will write his response in this form. Note that we will stress here the form of the response, not an individuals choice of criteria. As the teacher examines the above example he should observe that each statement is defined operationally. That is to say, each statement is capable of being tested objectively. The objective here is to demonstrate to students the difference between an evaluation based on the rules of evidence and an evaluation that cannot be tested.

Let us look at a more typical response that a student might make.

"I think that if the programs of the Equal Opportunities Act help more poor people to get out of poverty the programs are effective."

The teacher should guide the student with the following kinds of questions to a more rigorous statement:

(1) What is your definition of poverty?

(2) How many people are "more poor people"?

(3) How many persons who participated in the programs must be helped?

(4) How many persons must "get out of poverty" because of the programs before you will judge the programs to be an efficient use of tax money?

Another type of response may be heavily loaded with bias:

"I think that all government programs that help poor people are good because poor people need help from the government."

Guiding this student to a more rigorous statement will probably be more difficult that the previous example. The teacher's questions in this instance might be:

(1) What do you mean by "poor people"?

(2) What do you do when you "help" poor people? (Do you "help" them by raising their income $5, $10, $100, or $1,000? Do you help them just by giving them hope even if their incomes don't rise?)

(3) What do you mean by "good"? Do you mean the intentions of the programs are good or the results of the programs are good?

(4) What do you mean by "the government"? Which one - local, state, or national?

(5) Would you consider a program effective if it spent a million dollars of tax money to raise the income of one family from $2,100 to $3,100?

With the examples above we suggested that the teacher should guide individual students to a more rigorous statement of the kinds of evidence needed for evaluation. The suggestion also implies that the teacher will examine one student response at a time in depth. Possibly after one or two such examinations other members of the class may join the teacher in the examination of a fellow student's response.

Phases Three and Four

Up to this point the policies that we have considered have been concerned with changes in the potential mobility of the poor. The programs discussed, if effective, have made them ready to move to new jobs. We have not discussed the complex question of how the society might initiate policies that would create new jobs for them to move to. We were measuring the effectiveness of policies that aimed at increasing the potential mobility of the poor by the actual movement of these persons into new jobs that rewarded them with higher incomes. What if the new jobs did not exist? Could we have honestly measured the effectiveness of the above programs? We would have to preface the operational statement of the kind of evidence we are looking for with a statement such as: Given: a rate of economic growth that would create enough new jobs of the kind for which the people were being prepared in the programs. We are not going to pursue this interrelation between potential mobility and realized mobility. It is important, however, that the students understand the direction that an extention of this discussion would take. Movement into phases 3 and 4 of the outline of systematic investigation would require the extention mentioned above. In addition to the time limitation imposed on a semester course in economics it must also be realized that movement into phases 3 and 4 should be preceded by an understanding of several instances of

breakdown such as the one described in this situation. Hopefully the consequent curriculum will provide adequate opportunities for the application and extention of the analytical approach advocated by this cause.

STUDENT MATERIALS

For The Study Of Economics
In The Ninth Grade

Prepared by the staff of the Social Studies Curriculum
Center at the Ohio State University

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Introduction to the Student Materials

In the hands of man the great forests of the north are equally capable of becoming decorative wallpaper or the wrapper on a hamburger or hot dog; the coal of Pennsylvania may become a source of power in a factory or the source of sweetness for a cup of coffee in the form of saccharin; even the very air we breathe may be used to produce steel in the fiery center of a blast furnace or to cool and air-condition a skyscraper on a sweltering summer's day. There is seemingly no end to man's use of the earth and its products for his own benefit. Even his fellowman cannot escape being used to satisfy some human wants. In the past, slaves and servants have served to satisfy someone's desires just as teachers and dentists do today (however unwilling we may be to admit our need of them!).

In order to exist man must act, whether he is using the resources of the earth or the abilities of his fellowman - he cannot exist for long without eating, sleeping and drinking. Some can exist on little, others feel that they need more but all men pursue means of earning a living, whether it be by tracking and trapping wild animals, seeking out edible fruits and roots or laboring and sweating on a railroad crew in order to buy a steak, go to college or own a sports car.

All men have certain wants, simple and complex, and because they want and desire these things they have organized ways of obtaining them. This is exactly what economics is about and you are involved in it and have been from the moment of your birth. You became involved in economics when you began to consume the food that your parents supplied. You were involved in economics when you pleaded with your father for a new baseball glove or a swimming suit. Each time you have to make a decision on how you will spend your own money or save it, you are involved in economics. So you see, what you are about to study is not so much a matter of becoming involved in economics - you already are, up to your neck. What this course will attempt is to give you a clearer understanding of your involvement with economics.

After reading the dialogue between Chuck and Dennis as an introduction to our first unit, decide for yourself whether in fact economics has any relationship to a teen-ager in 20th century America.

Unit 1: Definition of Scarcity

I. First Situation: The Teen-age World of Economics

A. The following dialogue attempts to describe the kind of economic discussion ninth graders are involved in. Read it, correct it, bring it up to date as you discuss it in class. We know that you talk about economics even though you don't call it economics. You know better than we do exactly how ninth graders talk about their needs and wants.

Chuck: Did you see Jim's new transistor radio? It's great. It even has a plug-in earphone.

Dennis: He showed it to me yesterday. I wouldn't mind having one, but not for twenty-six bucks.

Chuck: That's a lot of cash. I've got thirty-two dollars saved up, but my mom says I gotta use some of it to buy clothes. Do you have to buy clothes out of your money?

Dennis: Naw, but my pop always harps on how much he spends for my clothes and stuff whenever I try to hit him for some extra money.

Chuck: What's the diff? I get the money but I can't buy the things I want with it. Mom says I need shoes and shirts for school, so I tried talking her into letting me get a pair of loafers for four bucks and two of those dollar shirts like Steve got at Lancers then I'd have enough to get the radio; but right away she says I can't buy none of that cheap imported stuff. She's trying to talk me into spending twelve dollars for shoes and six for shirts. If I buy a radio with what's left, all I can get is a junky one like Cindy's, but if I save up for a good one she'll be after me to buy socks or something.

Dennis: I feel for you. Last month I wanted eight bucks for a new hand brake for my bike and my dad trots out his big, black, budget book and shows me how much he spent on me that month. He even included the twelve dollars for the dentist. You'd think I wanted those cavities filled. I even tried the safety pitch. Can't ride the bike without good brakes, you know. He told me to walk.

Chuck: I know. The other day my mom started hinting around that the dentist bills should come out of my money.

Dennis: I can't wait till I'm old enough to get a job and spend the money the way I want to.

B. Make a list of ten things that you want. Arrange the list in order from one to ten according to things wanted most to things wanted least. How do you define the difference between necessities and luxuries?

1. _____ 6. _____

2. _____ 7. _____

3. _____ 8. _____

4. _____ 9. _____

5. _____ 10. _____

II. Second Situation: Goods and Services

A. In economic terms all goods and services are designated as goods. This idea may be reinforced by the following:

1. We can think of a doctor selling his services as if they were "packaged" as material goods.

one appendectomy	and	two spinal x-rays

2. a teacher:

one year's supply of algebra	and	one year's worth of writing skills

3. a policeman:

48 hours of protection	and	2 hours of traffic control

B. List five things on which you have spent money during the past week. Label them as either goods or services.

1. _____

2. _____

3. _____

4. _____

5. _____

Goods and services can be divided into subgroups. These subgroups help us to reason about economic decisions. Goods and services produced for direct use by consumers are called consumer goods and services. Producer goods and services are created because they are needed to produce other goods and services, for example: tools, machines, workers' skills, etc.

C. From your knowledge of businesses in your community make a list with five examples of businesses that deal with consumer's goods and another list of five examples that deal with producer's goods. Also, find one example of a business that deals with both consumer and producer goods.

Businesses Dealing in Consumer Goods or Services	Businesses Dealing in Producer Goods or Services
1. _____	1. _____
2. _____	2. _____
3. _____	3. _____
4. _____	4. _____
5. _____	5. _____

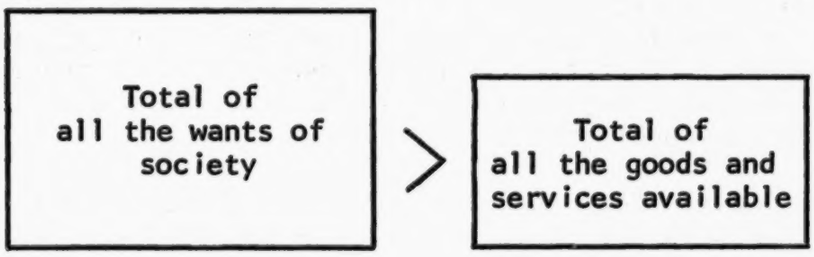
A business that deals in both producer and consumer goods and services:

1. _____

Suggestion - Let your fingers do the walking through the "yellow pages" of your telephone book for ideas as to which businesses deal with consumer goods and services and which deal with producer goods and services.

III. Third Situation: Concept of Scarcity

A. At noon on December 1, all activity in the United States stops. Every single individual in the country fills out a form on which they list everything that they want at that time. At 1:00 P.M. the forms are collected in the post offices across the land and sent to the U. S. Department of Commerce. Business firms also fill out forms on December 1 listing the quantities of all the goods and services available for sale on that date and these forms are also sent to the Department of Commerce. The data from these forms is fed into computers and on January 1 the Department of Commerce discloses that on December 1 Americans wanted 400 billion dollars worth of goods and services and that business firms had only 300 billion dollars worth of goods and services available to satisfy these wants. Economists in America rejoiced. At last they had evidence to prove that total scarcity existed. They could now say that at any given moment the total of all the wants in our society is greater than the total of all the goods and services available to satisfy these wants. This could be illustrated as follows:



The Department of Commerce has never conducted such a survey, and it is very unlikely that they ever will. An important reason for not conducting such a survey is that most people want things that they have a reasonable hope of getting. On a form that would ask people to list the things that they wanted, we could never be sure that people were limiting themselves to only those things which they could reasonably expect to get. We could list several other objections to the conclusions of our imaginary survey; in fact, the problems involved in proving the existence of total scarcity are so great that it is doubtful whether the idea of total scarcity can ever be proved in this way.

The idea of total scarcity, however, helps us to explain a great deal about the economic behavior of people even though its existence cannot be proved with a survey.

B. Returning to our imaginary Department of Commerce Survey, suppose that they had included the following table of statistics:

Table 1

Imaginary Survey
Department of Commerce
December 1, 19XX

Wants		Goods and Services Available	
Item	Dollar Value	Item	Dollar Value
1. 60,000 automobiles	150,000,000	1. 30,000 automobiles	75,000,000
2. 40,000 regular TV sets	6,000,000	2. 20,000 regular TV sets	3,000,000
3. 30,000 color TV sets	15,000,000	3. 10,000 color TV sets	5,000,000
etc.		etc.	

If we let ☐ stand for 10,000 units of each of the above items we can picture the relationship between wants and goods and services available in the following manner:

Table 2

Item	Wants	G and S Available	Ratio
1. Automobiles	☐☐☐☐☐☐	☐☐☐	2 to 1
2. Standard TV sets	☐☐☐☐	☐☐	2 to 1
3. Color TV sets	☐☐☐	☐	3 to 1

We see in Table 2 that the relationship between automobiles wanted and automobiles available (2 to 1) is the same as the relationship between the number of standard TV sets wanted and the number of standard TV sets available (2 to 1). Automobiles and standard TV sets are equally scarce. But the number of color TV sets wanted is three times as great as the number of color TV sets available (3 to 1). We can therefore say that color TV sets are relatively more scarce than automobiles or standard TV sets. The comparison of the degree of scarcity of one item (say automobiles) with the degree of scarcity of another item (say color TV sets) is called relative scarcity.

Even though we may never be able to discover the exact degree of scarcity of automobiles or the exact difference between the scarcity of automobiles and color television sets, it is helpful for us to realize that relative scarcity, as an idea, explains much of society's economic behavior.

C. We will add the following items to the "Imaginary Survey":

Table 3

Wants		Goods and Services Available	
Item	Dollar Value	Item	Dollar Value
4. 50,000 bicycles	1,750,000	4. 40,000 bicycles	1,400,000
5. 4,000 motor boats	1,200,000	5. 1,000 motor boats	300,000
6. 600,000 girls swim suits	12,000,000	6. 400,000 girls swim suits	8,000,000

Complete Table 4 below for the additional items. Let ☐ stand for 10,000 units of each item.

Table 4

Item	Wants	G and S Available	Ratio
4. Bicycles			
5. Motor boats			
6. Girls swim suits			

Arrange the six items (Tables 2 and 4) in terms of their relative degrees of scarcity. Make number one the most scarce item.

1. _____ 4. _____

2. _____ 5. _____

3. _____ 6. _____

Unit 2: Factors of Production

In Unit 1 we defined scarcity as that condition which exists when man's wants exceed the goods and services available to satisfy them. One may ask, "Why can't a society produce enough goods and services to satisfy its wants?" The answer to this question is that the resources used to make the goods and services are limited and therefore scarce. The economist calls these resources the factors of production. In everyday language we can say that these scarce factors of production are all the things that are brought together by man in order to produce goods and services.

I. First Situation: What are the Factors of Production?

The following account may help you see more clearly what the factors of production are by helping you identify and then classify the things that go into producing goods and services.

In a large American city a few years ago the police department converted an abandoned air strip into a drag strip for the use of teen-agers who wished to try out their mechanical creations. Not only was the number of automobile accidents reduced but the strip itself became a center of community entertainment for young and old. On any summer weekend hundreds of spectators flocked to the drag strip. It didn't take too many hot evenings to make the public drinking fountain and the sole "coke" machine completely inadequate to satisfy the thirsty throats of the spectators.

A couple of high school students saw possibilities in this situation: potential customers were just waiting to satisfy their thirst and hunger and were apparently willing to pay for it.

When the students approached one of the parents for advice on the possibility of setting up a snack-bar he told them that he'd be willing to loan them money to begin the project. Before he did that, however, he asked them to draw up a list of the things they'd need to consider before they could begin satisfying the wants of the drag strip spectators. In other words he was asking them to list what combination of things would produce the items necessary to satisfy the wants of the crowds.

II. Second Situation: Human and Natural Resources.

Now that you have been introduced to the economist's general terms for the factors of production, we can develop more precise definitions of such things as natural and human resources. What makes a resource a resource? One of our present natural resources is uranium. What made it a resource? Is whale oil still a resource? These questions and the following imaginary account of how a useless substance became a resource may give you a clearer idea of what is involved when economists talk about natural and human resources.

Before the invention of substitute materials, a black shale called slate was used exclusively in the production of blackboards. (Many persons still

prefer the natural slate blackboards.) In the process of quarrying the slate large amounts of inferior shale must also be removed. Throughout the slate district of eastern Pennsylvania, large piles of this inferior shale dot the landscape. This useless shale is not considered a resource; in fact, it is considered a nuisance, a blot on the natural landscape.

Now we will imagine that a process is discovered by which this useless shale is changed into a fuel. By placing the shale under enormous pressure a liquid fuel is extracted. This "fuel ale", as we will call it, has certain unique characteristics: it is not affected by changes in temperature, it burns slowly and gives off ten times as much energy per cubic centimeter as any existing liquid fuel. The cost of producing a barrel of "fuel ale", however, is thirty times as great as any existing liquid fuel.

As man becomes interested in space travel, the need increases for a liquid fuel that is not affected by drastic temperature changes and requires less storage space than conventional fuels. Large scale production of "fuel ale" begins. The shale piles are fenced and multi-million dollar processing plants are erected.

In ten years the increased research on fuels for space travel favor the so-called solid fuels. Production of "fuel ale" stops. The unused piles of inferior shale still dot the Pennsylvania landscape. There is talk about a new use for the shale piles. The shale could be crushed and used to form construction blocks for buildings in conjunction with the new solar heating units.

1. Why is shale not considered a resource?

2. Why did "fuel ale" fail to become a resource at first?

3. What circumstances led to its becoming a major resource?

4. What part could human resources have possibly played in making shale a resource?

5. Once a resource has been developed how could it influence the development of human resources?

6. After you have thought carefully about the above passage and questions, write your own definition of what a natural resource is.

7. Many times social studies textbooks suggest that Paraguay or some other unindustrialized nation is relatively poor in natural resources. The students may be assigned to write a paragraph explaining the meaning of this statement in terms of the preceding definition of natural resources. For example, students may be asked to think of Saudi-Arabia before and after the discovery of petroleum.

III. Third Situation: Capital

A. The following short story and the accompanying questions should help pinpoint the role of capital as one of the factors of production

in a short term one-man economy:

Green River Blues

Keith wondered how on earth he could have got into such a fix. Here he was, miles from civilization with faint chances of making contact with human beings for days or perhaps weeks. He sat down on the damp sand and gazed unhappily at the steep canyon walls. What had started as a canoe trip through the rapids of Green River in western Colorado now took on the appearance of personal tragedy - for Keith at least.

When the canoes hit the last stretch of turbulent water Keith had managed to guide his craft through the first few yards when suddenly he rammed a partly submerged log which was running the rapids too. The canoe spun to the left and to the right in a crazy pattern and in a second the pleasant canoe trip turned into a wild and wet struggle for survival among the swirling waters of Green River.

When Keith's eyes became accustomed to the sand-laden water he saw his canoe being tossed like a paper cup on the rocks on the west side of the river. The remainder of the canoe party were rushing through the half-mile stretch of rapidly moving water. Even if they knew of his plight they could do little to aid him. The next landing place was many miles downstream where a regrouping had been previously scheduled. This was no time for a planning session though. The foaming waters pushed him against his will and lodged him between two massive rocks almost opposite the wrecked canoe.

Breathing short, hurried gasps of air he held onto the smooth cold rock. It was impossible to get to the canoe but beneath the east wall of the canyon at this point there was a beach - a strip of land at least. Keith hesitated and then acted. His only hope was to make it to the east bank. The cold water began to numb his arms and legs but with effort born of fear and a last spurt of energy he struggled across the narrow channel of swift flowing water and clambered on to the sandy shore.

He was not alone - lizards scattered in all directions as he made his way to a higher level - flies buzzed around his head. He saw in an instant that he couldn't go anywhere. Beyond the few jasmine bushes and willows the canyon walls rose precipitously to the cloudless sky. His hands clutched at the damp sand and he threw it vengefully at the turbulent water. He began to think - if only he had followed instructions about . . oh, well, what good was there in worrying about what he had or hadn't done. At least he was alive and he could do something to stay that way. He began to survey the situation and laid out on the sand his total possessions: one knife, some string, a small first aid kit strapped to his belt and 28¢ in cash. Oh for a hamburger, he thought, but quickly realized that hamburger stands are not too common on the isolated beaches of Green River. The 28¢ was worthless for the present.

A movement in the small pool of water to his left drew his attention. In one of the many side pools formed by water escaping from the main current of the Green as it swirled past rocks and logs, he saw the fleeting form of

fish. His hunter's instinct came into play and fashioned a hook from one of the safety pins in the first aid kit. Baiting it with a crudely made worm in the form of a piece of band-aid he lowered it into the pool on the end of the string. Eventually he landed a fish.

At least he wouldn't starve, he thought, and then he said slowly to himself, "Raw fish!" The idea revolted him and he cast about for some alternatives. He needed fire but how could he get fire. The afternoon sun had just begun to hit his side of the canyon and he had noticed a coke bottle near the water's edge. He smashed the bottle against a rock and using the thick bottom began to focus the sun's rays on the dry bark of a dead willow. It was a tedious process but after 20 or 30 minutes smoke, then flame, began to emerge from the bunch of tinder-dry bark. Later he felt much like a caveman as he crouched over the small fire and licked the last morsel of fish from his fingers.

The sky was beginning to cloud over and his thoughts turned to shelter and sleep for that night. A cooling breeze began to move through the canyon. He was really a caveman, he thought, without a cave. Selecting the largest of the rocks scattered on the higher level he decided to use it as one side of a lean-to. With his knife he cut into the willow stand and after much bending and pulling and hacking he managed to produce poles which he used as rafters for his lean-to. He covered them with a mixture of dry bark and grass and hoped for the best in case of rain.

He kept the fire burning in spite of the smoke the green wood was producing. "Better to have the smoke," he sputtered, "than to be eaten alive by gnats." Besides, it could lead to his rescue if anyone took the trouble to look for him. He became depressed at that thought and began to wonder if he was worth looking for. "Anyone as stupid as I am deserves to be lost," he muttered under his breath. Thoughts of how he could be rescued crowded into his mind until finally he gave up and crawled into his home and went to sleep.

A water ouzel seeking its first food of the day awoke him next morning with its short, sharp cries. He stirred himself with difficulty from his hard bed of sand and grass. Sand seemed to be everywhere - in his eyes, nose, ears and throat. His neck was raw with the pressure of damp sand on the life jacket he had used as a pillow. Staggering to the water's edge he tried to wash the sleep from his eyes and in the process added more sand. "Sand and water everywhere and not a bite to eat," he thought as he tried to locate the canoe.

It was still held securely in the grips of the rocks. In the canoe were the things he needed so that he could exist for a few days at least: canned fruit, beans, flour; a saw, flashlight, matches and . . . he stopped short. He was wasting his time again. The canoe was as worthless to him as his 28¢. He couldn't make use of things he didn't have at his disposal.

He thought back on the stories he had heard about Robinson Crusoe and the Swiss Family Robinson. They had managed to survive alright but they had the fortune to land on South Sea Islands with plenty of fruit and animal

life. He didn't exactly relish the idea of roasted lizard but if . . . well, he decided to wait and see if the day would bring rescue.

In the meantime he set about making himself more comfortable. A few old wooden crates had been washed ashore and he took them apart using a hand-sized rock. He straightened out the nails and used the wood and nails to reinforce the roof of his lean-to.

The fish in the pool were still biting. This time he cooked the fish by wrapping them in layers of wet leaves (and the ever present sand!). He wondered how many different ways he could cook fish - dry it, roast it, boil it - no he didn't have a pot. He could always preserve it by drying it on a board but that would only be done if he wasn't rescued shortly. Rescued - he rolled the word on his tongue as if it were dessert. How much he'd appreciate all the things he had grown accustomed to at home.

Just then he looked up to see in the distance a group of river runners approaching the rapids. Their rubber rafts fairly bounced from wave to wave. Keith rushed to the river's edge and waved his hands wildly. As they approached they spotted his canoe and then turned to see him jumping frantically on the shore. The leading raft was maneuvered into the channel fringing the sand and Keith almost threw himself bodily on it. As he recounted the happenings of the last two days to the expedition members he was almost too excited to talk distinctly. One word recurred time and time again. A weather-beaten man in the uniform of a Colorado State Game Warden looked suddenly half serious. "Did you say fish?" "Yes," said Keith, "I caught them in a side pool." "I suppose you have a license for fishing," the warden asked. Keith felt in his back pocket and pulled out a sodden piece of paper - his fishing permit. Yep - his fishing had been legal, fully authorized by the State Game Commission.

B. Questions:

1. What items in the story were used by Keith as real capital?

2. What goods were produced by this real capital?

3. Which factors of production were used by Keith to produce the real capital?

Comment: Real capital involves a <u>choice</u> between using them to (1) produce <u>consumer goods</u> for the direct use of the consumer, (2) develop <u>producer goods</u> used for the production of consumer goods.

4. Into which of the above categories would the following items fall?

fish-hook
fish
coke bottle
willow poles
firewood
rock (used to smash bottle)
knife
leaves
bark

Comment: Real capital enables man to satisfy his wants more efficiently

5. How did having a knife prove of value to Keith?

6. Would a razor blade or saw have been more or less efficient?

7. Would the 28¢ be considered capital in this particular situation?

IV. Fourth Situation: The Entrepreneur

A. The role of the ENTREPRENEUR as a factor of production may be seen in the following case study of the United States steel industry and its major entrepreneur Andrew Carnegie.

Steel[1]

Before the 1850's the only way to produce steel was by the costly crucible process. As a result, steel was expensive and its uses limited. In the 1850's the discoveries of Bessemer and Kelly solved the problem of carbon content, and the result was a 2/3 drop in steel prices. Steel was now available for rails, structures, machines, and a myriad of other uses.

Despite the discovery of the Bessemer process, the American steel industry did not develop overnight. The techniques were new and the risks were high. The demand for steel was there, but someone had to be willing to bear the risk, to sell the steel, and to raise the large amounts of necessary finance.

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[1]Lance E. Davis, The Growth of Industrial Enterprise: 1860-1914. Published in cooperation with Scott, Foresman and Company. Copyright 1964, Curriculum Resources, Incorporated. Pp. 6-12. Reproduced by permission.

The Building of the Industry

In Andrew Carnegie the economy had such a person. Carnegie was particularly well suited to the task. His first job had been with the Pennsylvania Railroad and he well knew the railroads' need for a long-lived heavy-duty rail. Moreover, he had maintained close relations with many of the leaders of the industry. More recently he had been associated with a number of iron firms in the Pittsburgh area and with the Keystone Bridge Company. From the iron firms he learned something of heavy metal production problems and from the bridge company of the potential market for structural steel. In addition to his work experience, Carnegie possessed yet another talent that was to contribute to his success in the new steel industry. He was experienced in bringing together the finance needed to acquire large amounts of capital. He had launched both his iron enterprises and the Keystone Bridge Company by bringing together groups of strangers, each with some money to invest. Although the steel mill was larger than any of his previous ventures, the financial problem was really the same.

In 1872 Carnegie launched the Carnegie Steel Corporation. His first mill was the J. E. Thompson, and his first product was steel rails. Gradually he and his partners expanded their operations to include a number of new plants (some built, some acquired from less successful owners) and a full range of steel products.

Labor Problems

Problems of risk and capital acquisition were not the only ones that faced Carnegie. As his firm grew (and as other firms entered the industry and began to compete for workers) he found that he needed additional laborers to man the mills. Because of the early technology of steel production (a technology that required two tons of coal for every ton of iron ore) the mills were located near the coal fields. As the industry grew there were insufficient workers in that area to meet the demand for labor. To some extent the new mills attempted to train people who migrated from nearby farms, but this was insufficient to meet the rising demand for steel. As a result, immigrants from abroad (first Germany and then from eastern Europe) were induced to come to Pittsburgh to man the blast furnaces. Although it is impossible to determine exactly how many immigrants found employment in the mills, we do know that the number of foreign-born in Pennsylvania rose from one in six in 1870 to one in four in 1910. Moreover, if local histories and newspapers are to be believed, the proportion in the steel towns must have been much higher. Carnegie himself leaned heavily on immigrant labor and his best mill manager (and later a partner) was William Borntraeger, a German who could not speak English when he first went to work for Carnegie.

Competition

Although Carnegie's remained the largest firm, others were quick to imitate his success. Within a few years National, American and a host of others had begun to produce steel by the new process. Because of the competitive threat of these new firms, Carnegie could not rest on his laurels. As a result both Carnegie and his competitors quickly innovated the open

hearth furnace, which provided more control over the steel-making process. Within a few years the Bessemer furnace that had given birth to the industry was relegated to a secondary position. In 1872, when Carnegie started in business, the steel industry had produced only a few thousand tons. By 1887 production was almost 6 million tons, and at the turn of the century output had risen to almost 25 million tons.

The Birth of U. S. Steel

But the story of steel was not yet finished. The capital requirements, always large, had increased with the adoption of the open hearth techniques. Moreover, Carnegie and some of the industry's other leaders saw that even more financial resources would be needed to acquire iron and coal mines if the firm's source of supply were to be protected. John D. Rockefeller had gained control of a large portion of the Mesabi iron range in Minnesota and he showed the industry the value of its raw materials. Carnegie had been able to finance some of this additional investment, but many of the other firms could not. J. P. Morgan, the financier, saw in this shortage a chance to put together a single firm. It was to embrace all phases of production (mines, railroads, shipping lines, blast furnaces, steel mills, and fabricating plants) and produce not only rails and structural steel but wire, tubing, and the new alloys as well. Carnegie's retirement gave Morgan the chance to bring together not only Carnegie's holdings but also Rockefeller's iron mines, Federal Steel, American Steel and Wire, the Bessemer Steam Ship Company, National Steel, National Tube, American Bridge, American Sheet Steel, and a number of lesser companies. Thus the United States Steel Corporation was born. With this new giant in the field, the nation's output of steet continued to rise and by 1920 output had reached 60 million tons. Moreover, by that year new firms, including Bethelehem and Inland, although small by the standards of U. S. Steel, had risen to take part of the market from the dominant firm.

The Impact of Steel on the Economy

Nor does the story end with the steel firms themselves. The impact of Carnegie, Morgan, and the others was felt in all parts of the economy. In 1860 the size of machines was limited by the strength of their wooden or cast iron components. By 1900, the day of the wooden machine had passed. There were practically no size limits on those made of the new steel. The railroads of 1860 had used iron rails, but these rails limited the size of the rolling stock to about eight tons and wore out in two or three years. By 1905, the steel rails carried cars of 70 tons and lasted up to ten years. In almost every large city, new high-rise buildings were pushing their way skyward. As long as the main structural material had been wood, building height could not exceed five or six stories. With steel, however, skyscrapers (the Woolworth and Flatiron buildings, to name two) of over 50 stories were built.

B. Questions:

1. Why do you think Carnegie decided to manufacture steel rails rather than, say, paper clips or safety pins?

2. What risk was involved in his decision?

3. What change in his decisions might have occurred if motor vehicles and air transport planes had been invented and developed in 1874?

4. What special personal skills aided Carnegie in the development of his corporation?

5. Carnegie said that he wanted his epitaph to read "Here lies the man who was able to surround himself with men far cleverer than himself." How did this ability add to his success?

6. What might have been the result if Carnegie had been unable to use immigrant labor? What alternative choices could he have made and still succeed in developing his business?

7. Why was Carnegie able to acquire capital to finance his steel company while others failed to get the necessary capital?

8. How did Carnegie as entrepreneur "lead, focus and channel human and physical resources" in the production of steel rails?

V. Fifth Situation: Government as a Factor of Production

A. In the previous learning situation we discussed the role of the entrepreneur in bringing together natural, human and capital resources for production. This production, however, does not take place in a vacuum, it occurs in an environment and certain conditions must be present before production can take place. The environment must be fairly stable. Some degree of stability must exist before the entrepreneur will risk bringing human, natural, and capital resources together for production. Such stability is aided by government services performed at the local, state, or national level. There is no general agreement about where the services should be performed or how extensive the services should be; however, these policy questions will be studied later. At this point, we are only concerned with the minimum government services necessary for production.

B. The role that government should play in the economy is still being debated. Some economists do not consider government services as a factor of production. Studies of the emerging nations of Asia, Africa, and South America, however, highlight certain government services as factors necessary for production. Four areas of government services stand out clearly in this connection: 1. the provision and protection of transportation routes, 2. the provision and supervision of the money supply, 3. the laws defining and enforcing contracts, 4. the protection and definition of property.

To help us see the role of government as a factor of production, let us imagine what would happen if all of these basic governmental

services were eliminated. We will write the first part of this tale and let you complete the story.

Nihilos Against the World

About ninety-eight million miles away from the star known to earthmen as Proxima Centuri exists a small planet called Nihilos. The inhabitants of Nihilos have been successful, however, in keeping their existence a secret from the prying eyes and ears of earth's optical and radio telescopes by shielding themselves with a hydrogen emission barrier. Earthmen assume that the "noise" they pick up on their radio telescopes comes from a highly contracted, dying star; what they call a black dwarf.

The atmosphere of Nihilos is very similar to Earth's atmosphere; but, since Nihilos is a greater distance from her sun, evolution has occurred more rapidly than on Earth. In short, Nihilosians need a new home. They have more effective weapons than earthmen possess but they cannot use them for fear of permanently destroying the Earth's atmosphere and environment. The Grand Council of Nihilos decided on a strategy that would make earthmen defenseless against even such conventional weapons as guns and tanks.

Hypnosis was the key to the strategy. While earthmen were concentrating their equipment on one of their moon shots, five small space craft each carrying three Nihilosians landed at five different secluded areas on the Earth. With the aid of a device known as a Synaptron, they were able to lock in certain thought patterns in the minds of earthmen whom they chose as subjects--maybe we should say victims. Each earthman, thus synaptrized, was able to transfer his thoughts into the minds of every human being he came in contact with. The plan which the Nihilosians programmed into the minds of the unsuspecting earthmen called for the creation of an anti-government party. This party called for a step by step elimination of all government services. Rather than become involved with the usual earth arguments over what government should or should not do, they struck at the very heart of all governments. The famous "Four Steps" were:

1. All building, maintenance, and protection of roads, railroads, harbors, and air strips by government must stop.

2. All government control and regulation of the money supply must end.

3. All laws defining and enforcing contracts must be repealed.

4. All laws defining and protecting property must be repealed.

Although the anti-government party came into control in every country of the world, the records for the United States give the most interesting account of the step by step disintegration and the eventual take-over by the Nihilosians.

In July 1976, just three months after the printing of the first Anti-Government Party publication, D. E. Stroy, their leader, was in the White House. All local and state governments were already abolished, the former president

was impeached and found guilty, Congress had voted itself out of existence and D. E. Stroy had won a unanimous election with the promise to enact the "Four Steps." A small group of "hard heads" were immune to the Synaptron. They put up an insignificant resistance and were soon rounded up and shot.

As the "First Step" was put into operation a scramble took place among private individuals to buy up roads, harbors and maintenance equipment. Toll gates were erected along all major roads, sometimes as many as twenty-five in a hundred mile stretch of road. The rates varied enormously, but the average cost of travelling a hundred miles was $18.00. Trucking companies bought large stretches of roadway. In some cases these companies refused to allow competing trucking companies to use their roads and in all industries that required extensive transportation of raw materials or finished products, the price of the products skyrocketed. Because of these transportation difficulties, the total production of the country was drastically reduced, but the citizens were thoroughly synaptrized and the following year the "Second Step" was taken.

The "Second Step" called for the elimination of all government control and regulation of the money supply. D. E. Stroy closed all the Federal Reserve Banks and sold all the gold at Fort Knox to private individuals. Every commercial bank started printing its own money.

What effect would this have on production? Using your imagination, complete the story.

VI. Sixth Situation: Combining the factors of production

Each of the five factors of production have been dealt with separately for convenience sake in explaining what they are. It is important to remember, however, that they are interrelated in the actual production of the goods and services man wants. In this assignment you are asked to describe a local product or business and the way in which it uses the five basic factors of production. For instance, you could get information by interviewing the owner or manager of a local bakery, dairy, gas station, lumber yard, etc. A short sketch of when the business was established and why it was established could be followed by your account of how natural resources, human resources, etc., play their role in the business.

Can you find any examples of businessess which failed or are having a difficult time surviving because of a lack of one or more of the factors of production?

Unit 3: What to Produce

In Unit 2 you were introduced to the idea that man attempts to satisfy his wants and needs by making use of the factors of production. Because of scarcity he can never fully satisfy all his wants and needs and so must decide which ones are most important. In this unit we shall investigate some of the economic elements involved in this decision-making process.

I. First Situation:

A. This situation will attempt to involve you in making the decision about what the imaginary community of Preston will produce.

This community will be limited for ease of calculation to one hundred persons, and their wants to five rather than the thousands which are present in a real community. The community is situated in an advanced industrial country. For sake of our analysis we will suppose that the residents are able to produce automobiles, houses, refrigerators, television sets, and food within the community.

To produce these items the community will need factors of production in varying amounts so our community will start off with varying piles of the factors of production. To prevent the confusion which might arise if these factors were valued in terms of dollars, tons, bushels, degrees of skill, etc., we will simply refer to the factors as so many units of natural resources, human resources, capital, entrepreneurial skill and government service. Your involvement in the decision-making processes of this imaginary community should help you see how a society decides which goods and services and how much of each should be produced to satisfy the society's wants and needs.

B. How many units of natural resources does it take to make a television set? How many units of governmental services would it take? These are the kinds of questions you must ask yourself in order to see the relationship between the factors of production and the goods and services desired by the inhabitants of Preston. Once again for the sake of keeping the illustration as clear as possible the various amounts of resources required for the production of Preston's needs is given to you (see Table I below). These figures are not precise amounts in dollars and tons. They are simply imaginary units of measurement so that you can gain a clearer understanding of what is involved in determining "What to produce."

Table I: RESOURCE UNITS OF EACH FACTOR OF PRODUCTION REQUIRED FOR INDIVIDUAL ITEMS WANTED

In this imaginary community of 100 persons, in order to produce:	UNITS OF FACTORS OF PRODUCTION REQUIRED				
	Natural Resources	Human Resources	Capital Resources	Entrepren. Resources	Gov't. Resources
one automobile we need →	6	6	3	2	1
one house we need →	15	8	10	3	2
one refrigerator we need →	2	2	1	1	1
one television set we need →	5	12	8	3	1
one year's supply of food for one person we need →	1	4	1	1	1

C. Knowing what each item will require in the matter of units of resources is only part of the picture of Preston's economy. Before production can begin you must know the size of the various resource piles which are ready for your immediate use in satisfying Preston's wants. Table II gives you this information.

Table II: RESOURCE UNITS OF EACH FACTOR OF PRODUCTION AVAILABLE FOR IMMEDIATE USE

FACTORS OF PRODUCTION				
Natural Resources	Human Resources	Capital Resources	Entrepren. Resources	Gov't. Resources
1,100	1,100	1,000	400	400

D. You should remember from the discussions in Unit 2 that it is the factors of production that are actually scarce not just the goods they produce. Table II actually sets limits on how many goods can be produced in Preston. If the people are to have cars and televisions and refrigerators then obviously a decision must be made as to how much of each of these things can be produced with the limited resources listed in Table II. You have it in your power to decide which goods are most important. In economic language you have the power to draw up a "priorities list" for

the community. How many houses, television sets, and automobiles, etc. do you think Preston needs? Remember, your resources are limited!

E. To give you an idea on how to go about drawing up such a list, here is an example:

Jack's Priority List

Item of Production	Number of Items Wanted
Automobiles	5
Houses	20
Refrigerators	10
Television Sets	2
Food	100 (Supply of food for a year)

Jack has made a decision for 20 houses, so in order to calculate the amount of the factors of production 20 houses will use, he multiplies 20 by the number of units necessary to produce one house (see Table I). In this case 20 houses would require (15 x 20) 300 units of natural resources. In order to discover if he can satisfy the community's wants with the available factors of production Jack must calculate how many units each item of production will require and then compare his result with the available resources given in Table II. Using the above priority list Jack compiled the following results:

Jack's Priority List		FACTORS OF PRODUCTION REQUIRED				
Consumer Goods	Number Wanted	Natural Resources	Human Resources	Capital Resources	Entrepren. Resources	Gov't. Resources
Automobiles	5	30	30	15	10	5
Houses	20	300	160	200	60	40
Refrigerators	10	20	20	10	10	10
Television Sets	2	10	24	16	6	2
Food	100	100	400	100	100	100
Totals		460	634	341	186	157

He has kept his totals well within the limits of the factors of production available (Table II). Note that he has not fully utilized the available factors of production, nor does he have to. However,

we would say that his decisions have led to an economy operating far below its potential.

F. Another student suggested the following priority list:

Diane's Priority List

Item of Production	Number of Items Wanted
Automobiles	50
Houses	40
Refrigerators	40
Television Sets	50
Food	100 (Supply of food for a year)

This resulted in the consumption of the following amounts of the factors of production:

Diane's Priority List		FACTORS OF PRODUCTION REQUIRED				
Consumer Goods	Number Wanted	Natural Resources	Human Resources	Capital Resources	Entrepren. Resources	Gov't. Resources
Automobiles	50	300	300	150	100	50
Houses	40	600	320	400	120	80
Refrigerators	40	80	80	40	40	40
Television Sets	50	250	600	400	150	50
Food	100	100	400	100	100	100
Totals		1,330	1,700	1,090	510	320

When you compare the total factors of production consumed by Diane's priority list with the available factors of production listed in Table II you will see that it is impossible for the community to produce all the items on her priority list. The scarcity of the factors of production will force her to reduce the amounts of her priority list. The amount of factors of production available controls what goods will be produced. Diane forgot that the factors of production are limited and was unable to satisfy the demands of the priority list.

G. Your own set of values will determine what kind of priorities you will adopt. If you feel that everyone ought to have two cars and two television sets, you will need to cut down on some other items

such as food or houses. Remember, too, that your choices must be within the limits set by Table II. The blank forms below will aid you in setting up your priority list for Preston and in calculating the units of factors of production that must be consumed.

Item of Production	Number of Items Wanted
Automobiles	_____
Houses	_____
Refrigerators	_____
Television Sets	_____
Food	_____

You will need to refer to Table I and Table II on page 20 in order to complete your calculations.

Your Priority List		FACTORS OF PRODUCTION REQUIRED				
Consumer Goods	Number Wanted	Natural Resources	Human Resources	Capital Resources	Entrepren. Resources	Gov't. Resources
Automobiles						
Houses						
Refrigerators						
Television Sets						
Food						
Totals						

II. Second Situation: Consumer Goods Versus Producer Goods

A. In the last situation you participated in making decisions about what Preston should produce. The very much simplified illustration considered only the satisfaction of immediate wants--no consideration was given to what the community might want in the future. This second learning situation will attempt to show you how necessary it is for a society to concern itself not only with the satisfaction of present and immediate wants but also with the possible wants and needs of future generations. In this particular example you will be dealing with the future in two periods: the first twenty year period and the second twenty year period. Certain decisions must be made today so that the production of future goods will be assured for the next forty years. In other words, a choice must be made between conflicting alternatives. What

proportion of the resource pile will be used for the production of consumer goods and services? What proportion will be used for the production of producer goods and services?

B. You will make use of Table I and Table II from the previous situation and in addition two new tables, III and IV, in making your decisions as to what the pile of resources will be used for--consumer or producer goods.

The choice that a society must make between the amount of consumer goods and the amount of producer goods it wants now and in the future could be stated in this way: Are we willing to consume somewhat less than we could consume in the present in order that the future will show some growth in production? We know that in the next twenty years many of the machines and other tools that we are now using will wear out. We must set aside some of our present factors of production to at least replace these tools. Otherwise twenty years from now our society will suffer. Should we do more than just replace the present amount of machines and tools? Do we want our economy to grow? How much growth do we want, which is another way of saying, how much are we willing to sacrifice today so that the standard of living will be better twenty or forty years from now?

Table III gives you four different levels of growth--from no economic growth to high economic growth--and also gives you the amounts of each of the factors or production which must be set aside for producer goods in order to maintain or reach your chosen growth level. You may decide to use just enough of the factors of production for producer goods to replenish the resource pile (Static 0) or you may decide on one of the three choices which result in growth of the resource pile. Table III is designed to help you decide what proportion of the resource pile will be used for producer goods in the first twenty year period.

Table III: RESOURCE UNITS REQUIRED FOR PRODUCTION OF PRODUCER GOODS AT THE DIFFERENT GROWTH LEVELS

Economic Growth Levels	UNITS OF FACTORS OF PRODUCTION				
	Natural Resources	Human Resources	Capital Resources	Entrepren. Resources	Gov't. Resources
Static 0--no growth; this level just replaces original amount of factors of production	300	100	300	50	50
Growth I--low rate of growth; this level provides a moderate increase in the amount of the factors of production	400	150	450	100	100
Growth II--moderate rate of growth; this level provides a moderate increase in the amount of the factors of production	500	200	600	150	150
Growth III--high rate of growth; this level provides a high increase in the amount of the factors of production	600	250	750	200	200

Table IV shows you the units of factors of production available for future production at any one of the four growth levels during the second twenty year period.

Table IV: RESOURCE UNITS AVAILABLE FOR FUTURE PRODUCTION

If in Table III you chose:	UNITS OF FACTORS OF PRODUCTION				
	Natural Resources	Human Resources	Capital Resources	Entrepren. Resources	Gov't. Resources
Static 0--then for the second period of production you will have ⟶	1,100	1,100	1,000	400	400
Growth I--then for the second period of production you will have ⟶	1,200	1,150	1,450	450	450
Growth II--then for the second period of production you will have ⟶	1,400	1,200	1,600	550	550
Growth III--then for the second period of production you will have ⟶	1,800	1,250	1,750	700	700

Steve's Priority List
(First Twenty Year Period)

Item of Production	Number of Items Wanted
Consumer Goods	
Automobiles	15
Houses	20
Refrigerators	20
Television Sets	10
Food	100
Producer Goods	Growth I Level

Note: The priority list is based on the use of resources over a twenty year period. If Steve decides to use some of the original

resource pile so that he can produce producer goods for Growth I, then he will have to subtract the appropriate amount of resources from the original resource pile before he begins to calculate the amounts used to produce the consumer goods on his list.

Here is how Steve laid out his calculations:

	UNITS OF FACTORS OF PRODUCTION				
	Natural Resources	Human Resources	Capital Resources	Entrepren. Resources	Gov't. Resources
From: Original resource pile	1,100	1,100	1,000	400	400
Subtract: Resource units needed for Growth Level I	- 400	- 150	- 450	- 100	- 100
Result: Resource units available for consumer goods	700	950	550	300	300

Steve used the available factors of production to provide a comfortable standard of living for Preston during the first twenty year period. In addition he made sure enough units of the factors of production were reserved for producer goods so that there would be growth during the second twenty year period. The number of units Steve used for the production of consumer goods and services in the first period are listed in the following table:

Steve's Priority List		UNITS OF FACTORS OF PRODUCTION				
Consumer Goods	Number Wanted	Natural Resources	Human Resources	Capital Resources	Entrepren. Resources	Gov't. Resources
Automobiles	15	90	90	45	30	15
Houses	20	300	160	200	60	40
Refrigerators	20	40	40	20	20	20
Television Sets	10	50	120	80	30	10
Food	100	100	400	100	100	100
Totals		580	810	445	240	185

C. During the first twenty year period the population of Preston did not remain the same. More people were born than died so that by

the time the second period began the population had risen from 100 to 120. This rise in population must be considered carefully in any attempt to plan for future growth.

With a population of 120, Steve decided upon the following priority list for the second twenty year period.

Steve's Priority List
(Second Twenty Year Period)

Item of Production	Number of Items Wanted
Consumer Goods	
Automobiles	20
Houses	10
Refrigerators	20
Television Sets	15
Food	120
Producer Goods	Growth II Level

Using Table IV on the next page, locate the same Growth Level that Steve chose for the first twenty year period.

Table IV: RESOURCE UNITS AVAILABLE FOR FUTURE PRODUCTION

If in Table III you chose:	UNITS OF FACTORS OF PRODUCTION AVAILABLE FOR FUTURE PRODUCTION				
	Natural Resources	Human Resources	Capital Resources	Entrepren. Resources	Gov't. Resources
Static 0--then for the second period of production you will have →	1,100	1,100	1,000	400	400
Growth I--then for the second period of production you will have →	1,200	1,150	1,450	450	450
Growth II--then for the second period of production you will have →	1,400	1,200	1,600	550	550
Growth III--then for the second period of production you will have →	1,800	1,250	1,750	700	700

Because Steve had chosen the Growth I Level for the production of producer goods during the first twenty year period, we locate the Growth I Level on Table IV to find the amounts of each of the factors of production that are available for use in the second twenty year period.

	UNITS OF FACTORS OF PRODUCTION AVAILABLE*				
	Natural Resources	Human Resources	Capital Resources	Entrepren. Resources	Gov't. Resources
Growth I Level (Chosen in first 20 year period.)	1,200	1,150	1,450	450	450

*Listed in Table IV

Repeating the procedure followed in the first twenty year period, Steve subtracted the amounts he had decided to use for producer goods (in this second period he has decided to use Growth II) from the above listed resource units available.

	UNITS OF FACTORS OF PRODUCTION				
	Natural Resources	Human Resources	Capital Resources	Entrepren. Resources	Gov't. Resources
From: Resulting resource pile[1]	1,200	1,150	1,450	450	450
Subtract: Resource units needed for Growth Level II[2]	- 500	- 200	- 600	- 150	- 150
Result: Resource units available for consumer goods	700	950	850	300	300

1. Listed in Table IV
2. Listed in Table III

Steve's final result is tabulated in the following:

Steve's Priority List		UNITS OF FACTORS OF PRODUCTION REQUIRED				
Consumer Goods	Number Wanted	Natural Resources	Human Resources	Capital Resources	Entrepren. Resources	Gov't. Resources
Automobiles	20	120	120	60	40	20
Houses	10	150	80	100	30	20
Refrigerators	20	40	40	20	20	20
Television Sets	15	75	180	120	45	15
Food	120	120	480	120	120	120
Totals		505	900	420	255	195

Based on his priority list for 120 persons at Growth Level II this table shows us how Steve utilized the factors of production to satisfy the needs of Preston during the second twenty year period.

In this learning situation you have seen how Steve made his decisions about what Preston should produce. These decisions were not made blindly but were directly related to the factors of production available. While the example of Preston with a population of 100 to 120

is very much simplified compared to a large nation of 180 million, yet the same basic problem is faced by each: whatever goods and services are produced the choice must take into consideration the available factors of production. The next part of this learning situation will involve you in the decision-making process. What do you want Preston to produce? Follow each step in the decision-making process and remember the factors of production are limited!

Step 1

Decide on a Priority List.

PRIORITY LIST
(First Twenty Year Period)

Item of Production	Number of Items Wanted
Consumer Goods	
Automobiles	_____
Houses	_____
Refrigerators	_____
Television Sets	_____
Food	_____
Producer Goods	_____

(Decide on one of the Growth Levels for producer goods listed in Table III below.)

Step 2

A. Using Table III find the figure, at the particular Growth Level you have chosen, for the units required from each of the resources.

Table III: RESOURCE UNITS REQUIRED FOR PRODUCTION OF PRODUCER GOODS AT THE DIFFERENT GROWTH LEVELS

	UNITS OF FACTORS OF PRODUCTION				
	Natural Resources	Human Resources	Capital Resources	Entrepren. Resources	Gov't. Resources
Static 0--no growth; this level just replaces original resource pile	300	100	300	50	50
Growth I--low rate of growth; this level provides a moderate increase in the resource pile	400	150	450	100	100
Growth II--moderate rate of growth; this level provides a moderate increase in the resource pile	500	200	600	150	150
Growth III--high rate of growth; this level provides a high increase in the resource pile	600	250	750	200	200

B. Subtract these figures you have just found from the original resource pile (see Table II).

Table II: RESOURCE UNITS AVAILABLE FOR IMMEDIATE USE

UNITS OF FACTORS OF PRODUCTION				
Natural Resources	Human Resources	Capital Resources	Entrepren. Resources	Gov't. Resources
1100	1100	1000	400	400

The problem is set up this way:

	UNITS OF FACTORS OF PRODUCTION				
	Natural Resources	Human Resources	Capital Resources	Entrepren. Resources	Gov't. Resources
From: Original resource pile	1100	1100	1000	400	400
Subtract: Resource units needed for Growth Level chosen	___	___	___	___	___
Result: Resource units available for consumer goods	___	___	___	___	___

(These figures are to be used in Step 4)

Step 3

Taking each item on the priority list that you made,

-multiply the number wanted of that item
-by the number of units required from each of the resources for that item (Table I).

Table I: RESOURCE UNITS REQUIRED FOR INDIVIDUAL ITEMS WANTED

Units needed to produce:	UNITS OF FACTORS OF PRODUCTION				
	Natural Resources	Human Resources	Capital Resources	Entrepren. Resources	Gov't. Resources
one automobile →	6	6	3	2	1
one house →	15	8	10	3	2
one refrigerator →	2	2	1	1	1
one television →	5	12	8	3	1
one year's supply of food for one person →	1	4	1	1	1

The figures you get from that multiplying can be set up in a table as follows:

RESOURCE UNITS REQUIRED FOR ITEMS ON PRIORITY LIST

Consumer Goods	Number Wanted	UNITS OF FACTORS OF PRODUCTION				
		Natural Resources	Human Resources	Capital Resources	Entrepren. Resources	Gov't. Resources
Automobiles						
Houses						
Refrigerators						
Television Sets						
Food						
TOTALS						

Step 4

Compare these totals of resource units required for items on your priority list with the resource units available for consumer goods after figures for Growth Level have been subtracted from original resource pile. (See problem under B, Step 2.)

	UNITS OF FACTORS OF PRODUCTION				
	Natural Resources	Human Resources	Capital Resources	Entrepren. Resources	Gov't. Resources
Compare: Resource units available for consumer goods	_____	_____	_____	_____	_____
and					
Resource units required for items on Priority List	_____	_____	_____	_____	_____

If resource units required for items on your priority list are less than the resource units available, make whatever changes are needed in your priority list in order to get the maximum use of the resources.

If resource units required for items on your priority list are more than the resources available, make whatever changes are needed to make your list fit the resources available.

Step 5

Make a second priority list for the second twenty year period. Include on it the growth level for producer goods for that period.

PRIORITY LIST
(Second Twenty Year Period)

Item of Production	Number of Items Wanted
Consumer Goods	
Automobiles	_____
Houses	_____
Refrigerators	_____
Televisions Sets	_____
Food	_____
Producer Goods	_____

(Decide on one of the Growth Levels for producer goods listed in Table IV below.)

Step 6

Using Table IV, locate the same Growth Level that you chose for the first twenty year period.

Table IV: RESOURCE UNITS AVAILABLE FOR FUTURE PRODUCTION

If in Table III you chose:	UNITS OF FACTORS OF PRODUCTION				
	Natural Resources	Human Resources	Capital Resources	Entrepren. Resources	Gov't. Resources
Static 0--then for the second period of production you will have ⟶	1,100	1,100	1,000	400	400
Growth I--then for the second period of production you will have ⟶	1,200	1,150	1,450	450	450
Growth II--then for the second period of production you will have ⟶	1,400	1,200	1,600	550	550
Growth III--then for the second period of production you will have ⟶	1,800	1,250	1,750	700	700

From these figures (the number of units for each of the resources that are available for the second twenty year period), subtract the figures for the Growth Level you have chosen for the second twenty year period (these figures are given in Table III, Step 2).

	UNITS OF FACTORS OF PRODUCTION				
	Natural Resources	Human Resources	Capital Resources	Entrepren. Resources	Gov't. Resources
From: Resource units available for second twenty year period	___	___	___	___	___
Subtract: Resource units needed for Growth Level chosen	___	___	___	___	___
Result: Resource units available for consumer goods for second twenty year period	___	___	___	___	___

Step 7

On your second Priority List (as in Step 3),

-multiply each item on the list
-by the number of units required from each of the resources for that item (see Table I in Step 3).

The figures you get from this multiplying are to be listed in the following table:

RESOURCE UNITS REQUIRED FOR ITEMS ON PRIORITY LIST
(Second Twenty Year Period)

Consumer Goods	Number Wanted	UNITS OF FACTORS OF PRODUCTION				
		Natural Resources	Human Resources	Capital Resources	Entrepren. Resources	Gov't. Resources
Automobiles						
Houses						
Refrigerators						
Television Sets						
Food						
TOTALS						

Step 8

Compare these totals of resource units required for items on your second priority list with the resource units available for consumer goods for the second twenty year period (find these figures in the problem you worked in Step 6).

	UNITS OF FACTORS OF PRODUCTION				
	Natural Resources	Human Resources	Capital Resources	Entrepren. Resources	Gov't. Resources
Compare: Resource units available for Consumer Goods for second twenty year period	_____	_____	_____	_____	_____
and					
Resource units needed for items on Priority List for second twenty year period	_____	_____	_____	_____	_____

As in Step 4,

If resource units required for items on your second priority list are less than the resource units available for the second twenty year period, make whatever changes are needed in your second priority list in order to get the maximum use of the resources.

If resource units required for items on your second priority list are more than the resources available for the second twenty year period, make whatever changes are needed to make your list fit the resources available.

In this situation emphasis has been placed upon the relationship between producer goods and future economic growth.

III. Third Situation: The Market Economy - a system of signals.

The following passage illustrates how the market responds to signals initiated by a consumer.

Pizza Pie Signals

You pick up a telephone and order a large pizza for the family. Within an hour the delivery boy arrives at your door - you pay him $1.25 and everyone enjoys the pizza pie. Simple, you say. Yes, on the surface, but did you ever realize that when you made the decision to buy that pie you set in motion a train of events and communicated a series of messages along the economic line somewhat as you do when dialing a telephone number. Let's follow the sequence and see what happened to your order.

First of all you ordered the pie to satisfy your needs (you were hungry). Immediately, you lifted the telephone (a service supplied by a public utility) and ordered the pie. The clerk who took your order wrote it on a form and passed it through the window to the chief baker. He looked at it - checked to see which of his bakers was least busy and passed it on. The baker proceeded to mix the dough and prepare his oven. Within an hour the pie was ready. The baker put it in a cardboard box; called for a delivery boy and within minutes it was on its way to you. Still simple, you say. Yes, it's still pretty much a process of hitting down one domino and the rest fall. Let's look a little closer though.

Your original order used up electricity, flour, meat, cardboard, etc. Every pie produced means so much more of these things used. If one pie uses one-half pound of flour - 100 such pies means a sack of flour, which means so much grain ground at a mill and an increase in some farmers planting, irrigating, and reaping activities. Every single pie is one part of a larger decision to produce more flour. Every pie bought is in fact a "vote" for the production of more flour. Every pie bought flashes a message which reads: "more flour, more salt, more sausage, more electricity, more gasoline, more labor, more paper" and so on through a long series of requisitions.

Suppose after you ordered the pie the price of gasoline increased. Your message might come to a screeching halt as the pizza producers considered what to do. To deliver it was going to cost them more - should they charge you more? They might call you and ask if you still wanted the pie at the increased cost or they might rely on the small print on their advertisement, "We reserve the right to change prices without notice." Another stoppage might occur over shortage of the particular meat you ordered (pepperoni, say).

Back would come the message to you, "Are substitutes in order?" If yes, the process of getting the pie baked would continue; if not, your order would die in its tracks - the clerk would tear up the slip - the cook would throw up his hands and you'd still be hungry.

How about a hot dog? Well, that's a different story.

Unit 4: Allocating the Factors of Production

In Unit 3 you were involved in the same process that a society uses to decide what it shall produce.

In this unit you will become acquainted with the problem which a society has of deciding to what uses it should assign the factors of production so as to make sure the particular wants and needs of that society are satisfied. This assigning or apportioning of the factors of production to particular uses is called allocating the factors of production.

Now every change in a society's wants means that there must be some change in the allocation of the factors of production. The degree to which these factors can be changed or shifted or moved from one use to another in response to changing wants is called their "degree of mobility." Frequent changes of wants calls for a large degree of this mobility.

It is important to realize that mobility does not refer to the physical movements alone of, for example, coal, iron or lumber. A person or a machine may be mobile without necessarily moving or being moved from one place to another. Mobility can also refer to a person or machine's capacity to be used in different ways. For example: a man who loses his job as a mechanic but who is still able to obtain a position as an electrician is said to be highly mobile.

I. First Situation: The following illustration is used to show how changes in demand cause changes in the allocation of the factors of production. A society asks for (demands) those particular things it wants and needs. (All of the illustrations in this unit should make clear how changes in wants bring about changes in production and, in turn, changes in the allocation of factors of production.)

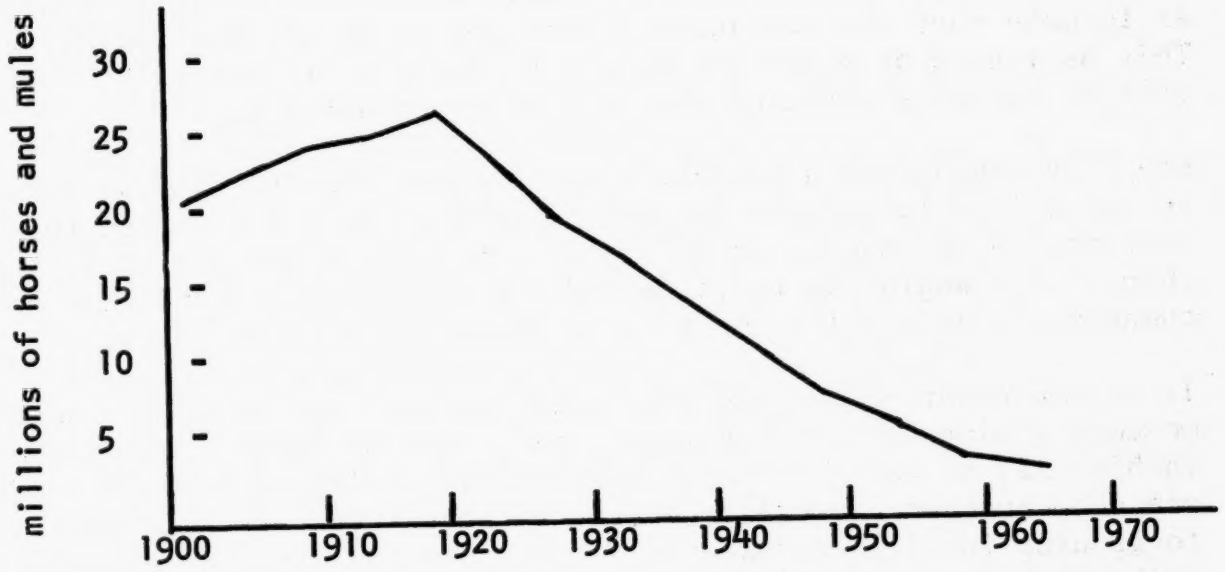
   A. Scientists have discovered a means for collecting energy from the sun's rays. They have also discovered how to store this energy and release it at will. Technicians have developed the equipment necessary for using this energy to heat homes and drive the generators that produce electricity.

      Businessmen have calculated the cost of producing this equipment. If factories are created that can produce fifty thousand solar furnaces per year, the cost of each solar furnace unit will be approximately $1,200 for an average size home under average climatic conditions. Maintenance of such a unit will cost approximately $25 per year. The typical cost of a new furnace of the existing types (coal, oil, gas) for an average home under average climatic conditions is approximately $500 and the cost of fuel and maintenance runs about $200 per year.

      Consumers, we will imagine, will want these new solar furnaces. Some will be bought for installation in the new homes under construction and some will be bought as replacements for existing

furnaces. At any rate, we will suppose that consumers want at least 50,000 such solar units per year.

B. The influence which an innovation in technology may have on the allocation of various resources is illustrated by the following graph which shows the number of horses and mules on farms in the United States between 1900 and 1960.



Sources: U. S. Bureau of the Census, Historical Statistics of the United States, Colonial Times to 1957, Washington, D. C. 1960, p. 289; and Statistical Abstract of the United States 1962, Washington, D. C., 1962, p. 673.

C. Other examples of innovation and its affect upon allocation may be seen in the following:

Table I.

Year	Passenger Cars	Miles of Surfaced Rural Roads
1915	2,332,426	276,000
1925	17,481,001	521,000
1935	22,034,753	1,080,000
1940	27,465,826	1,367,000
1945.	25,793,493	1,721,000
1955	52,135,583	2,273,000

Source: U. S. Bureau of the Census, Historical Statistics of the United States, Colonial Times to 1957, Washington, D. C. 1960, pp. 458, 462.

Table II.

Year	Passenger Miles (in billions)	
	Air	Railroad
1940	1	19.7
1950	8	26.7
1960	25.3	21

Source: U. S. Bureau of the Census, Historical Statistics of the United States, Colonial Times to 1957, Washington, D. C., 1960, pp. 429-431, 467.

How might this change influence the allocation of human resources?

II. Second Situation

A. In the first learning situation for this unit we discussed some of the changes in the allocation of resources that might result from the demand for solar furnaces. Using this imaginary illustration once again, we will attempt in this learning situation to illustrate in more detail some of the complexity involved in shifting resources from one use to another.

B. Some resources shift more readily from one use to another. We learned in Unit 2 that the resources man uses to produce the goods and services he needs and wants can be conveniently grouped under the five factors of production. We can also say that some of the factors of production shift more readily than others from one use to another. So that the illustration will not be unnecessarily complicated, we will concentrate on the adjustment process of only one of the factors of production, the labor factor of human resources.

C. The following play illustrates some of the details involved in the allocation of human resources.

Man and Mobility

Setting: The action takes place in the offices of two industrial concerns. The recently organized Solar-Furnace Company of Houston, Texas, has advertised for an engineer and Scene I depicts several interviews between the manager of Solar Furnace Company, Mr. Richards, and four applicants for the position. The fourth applicant, Mr. Corelli, agrees to take the engineering position. Scene II depicts the reaction in the Alpha Electronics Company, from which Mr. Corelli resigned. The only props required are a desk, a table and four chairs, and a box to serve as an intercom.

SCENE I

Scene I opens with Mr. Richards examining papers on his desk. He picks out four papers, speaks to his secretary through the office intercom.

Mr. Richards: Miss Adams, have the applicants arrived?

Pause -
Mr. Richards: Very well, have Mr. Larkins come in first, please.

(Enter Mr. Larkins)

Mr. Richards: How do you do, Mr. Larkins, I am Mr. Richards. Please have a seat.

Mr. Larkins: Good morning, I'm glad you could see me this soon. I really have to make a decision rather quickly regarding my future employment.

Mr. Richards: Well, we're eager to come to a decision too since we want to start production as quickly as possible. How soon would you be able to move to Houston?

Mr. Larkins: Just as soon as I can wind up my affairs in Little Rock - say about four to five weeks.

Mr. Richards: Fine - in your letter (picks up letter) I noticed that you have had rather wide experience in the electronics field. Where did you get your initial training?

Mr. Larkins: I took both my B.S. and M.S. at Massachusetts Institute of Technology. Incidentally, part of my work was connected with primary research on solar-energy conversion.

Mr. Richards: Yes, I was impressed with that in checking over your credentials. We certainly feel that you would be a valuable addition to our company. While we might not be able to offer you quite as much as you indicated in your application, still I think within a few years the opportunities for a significant increase in salary will be very good.

Mr. Larkins: Exactly what salary did you have in mind?

Mr. Richards: Sixteen thousand dollars, plus a pension plan and the opportunity of buying shares in Solar-Furnace, Inc.

Mr. Larkins: I'm certain your company will do well. However, I'm afraid the salary you offer is not adequate. You see, I'm presently receiving $18,000 and if I remain with McAllister I have a number of favorable financial guarantees.

Mr. Richards: Well, we appreciate your frankness but if you ever do feel you would like to work with us don't hesitate to contact us.

Mr. Larkins: Thank you. I'm glad to have made your acquaintance.

(Exit Mr. Larkins)

Mr. Richards: Miss Adams, would you please send in one of the other applicants.

(Enter Mr. Lamont)

Mr. Lamont (enthusiastically): I'm Bob Lamont from Ann Arbor, Michigan.

Mr. Richards: Hope you had a good flight, Mr. Lamont. Is this your first visit to Houston?

Mr. Lamont: Yes, but I've been thinking of moving South for several years. My wife's a Southern girl and doesn't like the northern winters. We've been waiting for an opportunity to move but can't afford a reduction in salary.

Mr. Richards: What is your present salary with Carson Steel?

Mr. Lamont: Ten thousand dollars.

Mr. Richards: Well, if you're the right man for this job I'm sure we can improve on that substantially. From your application though I was not quite clear as to your specific qualifications. Could you be a bit more specific about your training and experience?

Mr. Lamont: I took my work at Purdue in chemical engineering and have been with Carson Steel since graduating in 1958.

Mr. Richards: Have you had any experience in energy conversion or structural design?

Mr. Lamont: Not directly, but I have been interested in both areas for a number of years.

Mr. Richards: Hmmmm - as you probably know, our company has just been organized and we do need someone with extensive experience and training in these areas. However, in a year or two when we are in full production we may be able to give you some on the job training. At the present we don't have a place for you.

Mr. Lamont (shaking hands): Thanks anyway.

(Exit Mr. Lamont)

Mr. Richards: Miss Adams, has Mr. Stein arrived yet?

Pause
Mr. Richards: He has a pretty tight schedule so I'll see him right now.

(Enter Mr. Stein)

Mr. Stein: Hello, John, I'm glad you wrote me and gave me your new location.

Mr. Richards: Well, I thought that if you were going to be here I ought to see you. Congratulations by the way. It's not everyone who gets elected to head the National Association of Structural Engineers.

Mr. Stein: Thanks. Now, what was it you had in mind?

Mr. Richards: We're about to get Solar Furnaces under way and while you were down here I thought I'd ask you if you would be interested in heading up our structural design section. I've noticed that you've been doing work along that line with Radiant Heat.

Mr. Stein: Yes, I have. The work in Boston has been especially challenging and I've pretty well set my roots down--haven't really thought about moving. The kids are in college and high school and we've just bought a new home.

Mr. Richards: Well, I know this is a shot in the dark but what would you think of $20,000 as a starter.

Mr. Stein: That's a generous offer and I appreciate your interest in my work. But, John, I just don't want to move.

Mr. Richards: I know how you feel--we're hoping to settle down here in Houston ourselves. Thanks anyway for stopping in.

Mr. Stein (shaking hands): Keep in touch. Give my regards to Mary and the kids.

(Exit Mr. Stein)

Mr. Richards: Miss Adams, I believe there was one more applicant scheduled for this morning. (Pause) Yes, send Mr. Corelli in.

(Enter Mr. Corelli)

Mr. Corelli: Good morning, sir. I'm Anthony Corelli.

Mr. Richards: Pleased to meet you, Mr. Corelli. I'm John Richards. I noticed on your application that you've been working for Alpha Electronics for the last five years. Your specialty is research isn't it?

Mr. Corelli: Yes, but I've come to a point where I'd like to have some experience with the translation of pure research into actual products.

Mr. Richards: Well, you've certainly come to the right place. You realize, of course, that you'd have to move to Houston. I assume from your application that since you are not married this wouldn't be a great problem for you.

Mr. Corelli: That's right. No problem at all.

Mr. Richards: Your qualifications are adequate and since moving is no problem I suppose the only remaining consideration is salary. To come to the point, we can offer you $14,000.

Mr. Corelli: Well--I'm presently receiving $14,000 and although I'm interested in getting the experience of this type of operation, I feel that there would also have to be some financial advantages before I'd consider moving.

Mr. Richards: What would you consider as an adequate increase?

Mr. Corelli: I don't feel that I could move for less than a salary of $16,000.

Mr. Richards: Hmmmm - I'll consider it. How can I get in touch with you if we decide to meet that amount?

Mr. Corelli: I'm staying at the Norfolk Hotel until tomorrow. How soon could I expect a decision since I was planning to leave Houston tomorrow at noon?

Mr. Richards: We will probably come to a decision this evening. If we don't, I'll write you as soon as we do.

Mr. Corelli: That's fine. I'll look forward to hearing from you.

(Exit Mr. Corelli)

CURTAIN ON SCENE

SCENE II

Mr. Pindar - Manager of Alpha Electronics
Mrs. Samuels - personnel manager of Alpha Electronics
Mr. Brock - production manager of Alpha Electronics
Mr. Fulton - chief accountant of Alpha Electronics

Scene II opens in the office of Mr. Pindar. Mr. Corelli is speaking to Mr. Pindar.

Mr. Corelli: I'm glad you understand my position. I have enjoyed working for you these past few years. It has been a valuable experience.

Mr. Pindar: Well, Tony, we're sorry to lose you but I wish you every success in Texas. Good bye and good luck!

(Shake hands - Exit Mr. Corelli)

Mr. Pindar (speaking into intercom): Susan, please have Mrs. Samuels, Mr. Brock and Mr. Fulton come to my office.

(Enter Mrs. Samuels and Mr. Brock)

Mrs. Samuels: Good morning, Mr. Pindar.

Mr. Brock: Bill will be along in a minute or two.

Mr. Pindar: I have a matter I'd like to have you consider.

(Enter Mr. Fulton)

Mr. Pindar: Hello, Bill, have a chair.

As you probably have heard, Tony Corelli is leaving us. I thought this would be a good time to come to a decision as to whether or not we want to replace him. If we do replace him, should we hire someone to continue the kind of work he was doing or should Mark and Steve handle that end of the research.

Mrs. Samuels: Wouldn't that be putting too much of a load on them?

Mr. Pindar: Well, I thought this might be a good time to purchase that computer service we had talked about. I think the two of them could handle it with the help of a computer.

Mr. Brock: I'm of the same opinion. Besides, we may be able to use the computer to process other production information. Of course, before we decide, we ought to determine whether the demands of our research division are great enough to justify the additional expenditure. It may be that they are not.

Mr. Fulton: Corelli was getting $14,000. Even if we pay a new man $16,000 it would still be much less than the $30,000 per year required to operate a computer.

Mr. Pindar: Mrs. Samuels, what are our chances of getting a man of Corelli's abilities for less than sixteen thousand?

Mrs. Samuels: There are a number of applications on file and I'll look into them for you, but as I recall most of the applicants were rather inexperienced in research. I'd say off hand that it'll be difficult to replace him for less than sixteen thousand.

Mr. Fulton to Mr. Brock: Bob, do you think the cost of a computer would be offset by production gains?

Mr. Brock: Yes, I do. According to my rough calculations the use of a computer twenty hours a week would be worth a least $10,000 a year to us.

Mr. Pindar: For the time being, let's have Mrs. Samuels look for a replacement for Corelli. If, after say a month, we are still unable to find the right man we'll give serious consideration to computer services. Thank you very much for your opinions. (Rising)

(Exit Mrs. Samuels and Mr. Brock)

Mr. Fulton (leaving): I'll have the quarterly report ready for you this afternoon. (Exit)

Unit 5: Stimulating Efficiency

In Unit 3 you studied how man decides what to produce. Unit 4 emphasized that a decision about what to produce results in a shifting or allocation of the available factors of production. The third basic economic decision which man faces is how to use the scarce factors of production efficiently, so that he will get as much out of them as possible. Economists often refer to this as getting the largest possible OUTPUT of goods and services out of a given amount of INPUT of the factors of production. Efficiency is a synonym for productivity and refers to how well scarce resources are used. It must not be confused with production (or Output) which is simply a statement of how much goods and services are produced.

I. First Situation

A. The story of Dave and his efforts to increase his efficiency as a lawn mowing expert may help you see how efficiency of operation may increase productivity.

A Matter of Efficiency

Dave was given a new weekend chore. His parents had decided that he ought to do something to help keep the garden neat. He had to cut the front and rear lawns every Saturday during the summer before he could go off with his friends to the swimming pool. Each weekend he dragged the old hand mower out of the garage and began to cut the grass in a haphazard manner. Back and forth across the lawn he went, sometimes having to go over an area two or three times before the grass was short enough. "Gee," he muttered, "why don't we plant concrete and paint it green." At other times he'd think how much better it would be if the mower blades were five feet long -- "a couple of swipes and I'd have it done." Then he'd wonder how he'd ever turn a five foot mower around at the end of each run. It was bad enough turning this one with a 20 inch blade. After the grass was cut he had to rake the clippings and load them into a garbage can. When the job was finished two and a half hours of his precious Saturday time were gone but he knew he had to do this before he could go to the swimming pool or to a movie.

On one particular Saturday morning a friend stopped by to wait for him. As Dave rushed to get the job done, Jim suggested that he'd do his job quicker if he'd plan it a little better. Instead of going back and forth across the lawn, he showed him how to go around the whole lawn a strip at a time gradually working in to the middle. "That way," Jim said, "you'll see where you are and you won't have to turn the mower around at the edge of the lawn every few minutes." Dave followed his advice and cut his time to two hours.

The following week he was still concerned about the time he was spending on the lawn so he looked around in the garage for the canvas grass catcher. He found it behind the storm windows. It was almost new -- his father never had used it. "Too much trouble to keep it on," he'd say. Dave tightened up one or two screws and fitted it on to the mower. That morning he cut his time to one and a half hours and didn't forget to let his father know how quickly he was getting the job done. His father seemed quite impressed but

then added half seriously, "That's too bad -- you were taking so long to get it done that I had almost decided to buy a power mower. Now that you are so efficient I guess I wont' have to."

Dave lost no time in convincing his father that with a power mower he would do the job even faster and it would be so much neater, too. Besides, if they had a power mower he'd earn his pocket money by cutting the neighbor's lawns while they were on vacation. "We'll see about that when the time comes," said his father.

One week later Dave was out early zipping through the grass with the new mower. He didn't even have to rake or dump the cuttings. This new machine cut them up so fine that they could be left on the lawn. He didn't have to push either. With a little gasoline, a yank on the starter and a good straight eye he cut even the longest grass with ease. In 40 minutes the job was complete and as he grabbed his suit and towel he thought, "Good deal! Boy, talk about efficiency!"

B. The definition of efficiency may be further explored by making some measurements of efficiency. To do this we must know:

1. the Output - how much goods and services are produced.

2. the Input - the total cost (in time or money) needed to produce the output.

Efficiency is a comparison between the Output and the Input and is expressed by economists as a formula:

$$\frac{\text{Output}}{\text{Input}} \text{ or } \frac{O}{I}$$

The comparative efficiency of a person, industry or nation at one time may be compared with the efficiency at another time by the following:

$$\frac{\text{Efficiency at a given period or time}}{\text{Efficiency at a previous period or time}}$$

which is actually

$$\frac{\dfrac{\text{Output}}{\text{Input}}}{\dfrac{\text{Output}}{\text{Input}}}$$

With these formulas in mind we may calculate efficiency.

C. Efficiency as a comparison between inputs and outputs may be further refined in the case of Pat's scarves:

Pat volunteered to knit four small scarves for babies for a charity bazaar. She had just learned to knit and was interested in seeing how much more efficient she would be as her scarf project progressed.

To do this she kept the follwing record:

First Scarf

Wool	$1.00
Needles	.75
Pattern	.25
Time (6 hours @ 50¢ per hour)	3.00
Total Input	$5.00

The scarves were tagged to sell at the bazaar for $5.00, which can be considered the output.

Pat's first scarf took six hours because of her inexperience (she had to rip it out twice and begin over again). When the next attempt was made she benefited from her experience.

Next Three Scarves

Wool	$3.00
*Needles	.75
*Pattern	.25
Time (7 hours @ 50¢ per hour)	3.50
Total Input	$7.50
Output =	$15.00

Pat's efficiency may be calculated by using the formula:

$$\frac{\frac{\text{Output for second attempt}}{\text{Input for second attempt}}}{\frac{\text{Output for first attempt}}{\text{Input for first attempt}}} = \frac{\frac{15}{7.5}}{\frac{5}{5}} = \frac{2}{1} = 2.$$

Because of Pat's increased skill at knitting she was twice as efficient in her second attempt than in her first.

II. Second Situation: Specialization

A. Now that you have defined efficiency as a relationship between total inputs and total outputs consideration must be given to the means used to stimulate greater efficiency. Perhaps the best known stimulator of efficiency is specialization, which may be divided into

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*For the sake of simplicity we have not included consideration of the depreciation of needles and pattern. A precise attempt at calculating efficiency would take this into consideration. In this instance, however, we are mainly interested in how Pat increased her personal efficiency by experience.

three basic types:

1. Specialization due to division of labor.

2. Specialization due to equal advantage.

3. Specialization due to comparative advantage.

B. The first part of this situation involves a classroom activity illustrating specialization due to equal advantage.

C. The following illustration is intended to introduce you to the notion of comparative advantage:

For several years the Kingsley Corporation operated two plants in Springfield and Yonkers. Both plants produced electric irons and toasters. The following chart shows the typical yearly production for both plants.

Plant	Electric Irons Produced	Time Spent	Electric Toasters Produced	Time Spent
Springfield	6,000	1/3 year	8,000	2/3 year
Yonkers	4,000	1/3 year	4,000	2/3 year
Totals	10,000	2/3 year	12,000	1-1/3 year

The corporation's economist suggested that production could be increased if both plants specialized. Which plant should specialize in producing irons and which plant should specialize in producing toasters? You can see that the Springfield plant was more efficient than the Yonkers plant in the production of both irons and toasters. For every four irons produced by the Yonkers plant the Springfield plant turned out six irons over the same period of time (one-third of a year) and for every four toasters made at the Yonkers plant the Springfield plant produced eight in the same time period (two-thirds of a year). Consequently, the economist concluded that the Springfield plant should spend the whole year specializing in the production of toasters where they had a two to one advantage, and that the Yonkers plant should produce only electric irons because in producing irons they had the least comparative disadvantage (six to four or, reducing this to lowest terms, three to two). The production of the two plants showed these results under the new production program.

Plant	Electric Irons Produced	Time Spent	Electric Toasters Produced	Time Spent
Springfield	0	0	12,000	1 year
Yonkers	12,000	1 year	0	0
Totals	12,000	1 year	12,000	1 year

Thus specialization in terms of comparative advantage resulted in a productivity gain of 2,000 electric irons.

D. The following tables are to be used in a classroom experiment illustrating the gains due to comparative advantage.

Without Specialization					
Name of Student	Time in Seconds	Red Output	Time in Seconds	Blue Output	Total Red & Blue Output
	60		30		
	30		60		
Totals	90		90		

With Specialization					
Name of Student	Time in Seconds	Red Output	Time in Seconds	Blue Output	Total Red & Blue Output
	0		90		
	90		0		
Totals	90		90		

III. Third Situation: Scale of Production

Another source of efficiency or productivity is the size or scale of operation. An excellent example of how scale of operation led to more efficiency is the Ford Motor Company which began as the Detroit Automobile Company in 1899 when Henry Ford had accumulated enough money and skill to begin the manufacture of automobiles. In the two years of its existence this company produced twenty cars. Why? This description by historian Allan Nevins gives the answer.

The First Fords

The men assembled the motors on a bench. The frame of the car was then placed on wooden horses, and the motor, transmission, springs, and axles were installed. This furnished a complete chasis; wheels were then attached, and finally the body (that is, sides, seats, cushions, dash, and so on) was assembled. . .An immense amount of detailed hand work was involved, with much alteration or repair of parts that did not fit, and much drilling, riveting, and bolting. The number of items to be separately adjusted -- exhaust, muffler, tail pipes, brake rods, wheels, tires, levers, dashboard,

windshield, horns, fenders, steps, and so on -- seemed staggering. The marvel is that any of these elaborate early carriages got put together correctly, and, with all their bolts, rivets, screws, and other vulnerable connections, proved durable as day-in-and-day-out conveyances.[1]

> It took almost three months to assemble one car! One of the reasons for the company's failure was that the car was too expensive to produce and too few people could buy it. In 1908, however, Ford had so organized the techniques of mass production as to be able to produce the Model T (which for nineteen years was Ford's major product) and sell it at a lower price than other cars. As production increased and the company became more efficient the price of the Model T fell from $809 in 1908 to $380 in 1926.
>
> Profits were used to expand facilities which led to still greater productivity. Large scale purchases of raw materials and parts decreased the cost of these items thus allowing more money to be used for expansion. Assembly plants were set up in various parts of the country cutting the cost of transporting complete automobiles. By 1914 the moving assembly line was in operation. All these innovations increased the efficiency of Ford Motor Company and its production of automobiles rose from 20 in 1900 to 8,000 in 1907 and 250,000 in 1914![2]

1. Will an increase in the scale of enterprise always result in more efficient production?

2. Can you think of any ways in which an increase in enterprise might result in less efficiency?

IV. Fourth Situation: Motivation about being efficient

A. In the previous situations we attempted to define efficiency as the use of scarce resources so that we get as much out of them as possible. It was also shown how specialization and scale of production may stimulate the most efficient use of resources. This fourth learning situation deals with the question: "Why should people care about being efficient?"

Why are you more efficient at one job than another?

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[1]Allan Nevins, Ford: The Times, The Man, The Company, (New York: Charles Scribner's Sons, 1954), 184 ff. Reproduced by permission.

[2]A detailed account of the Ford Motor Company may be found in Casebook in Business History and Economic Concepts for use in Secondary Schools, edited by Ralph W. Hidy and Paul E. Cawein, Copyright 1965 by the City of Newton, Massachusetts.

B. Some idea of the factors involved in the motivation to care about being efficient may be had by speculating about the reasons for Bill's efficiency and Don's lack of it in the following instance:

Bill and Don operate lathes in an automobile parts factors. They produce the same type of parts, work an equal number of hours and are paid by the number of finished parts they produce.

Each month the production manager indicates on a chart the productivity of each worker. The chart shows that Bill is consistently ahead of Don as far as productivity is concerned. The owner of the factory asks the production manager for an explanation of the difference between the two workers. How would you explain it.?

Unit 6: Dividing the Goods and Services

The previous units explored the processes by which a society decides what goods and services it wants to produce and how these decisions affected the allocation of its resources. Unit 5 explained how a society could make the most efficient use of its resources. All of these decisions were influenced by scarcity. The fourth basic economic decision, concerning the distribution of the goods and services, is also influenced by scarcity: Which members of society will get what goods and services?

I. First Situation: Ways of dividing goods and services among consumers.

A. In some cases a society may decide to distribute certain goods and services <u>equally</u> among all members of society. Examples of this type of distribution in our society are the services of public school education for all children and police protection for all citizens. In other cases, a society may decide to distribute certain goods and services according to the <u>status</u> of individuals in the society. One example of this type of distribution in our society is found in the armed forces where officers usually have living quarters which are superior to those of enlisted men. In some other societies, kings, chiefs, sheiks, medicine men receive a larger than average share of goods and services merely because of their status in the society. A society may also decide to distribute certain goods and services on the basis of competitive bidding between the members of the society. In this case, the <u>ability</u> and <u>willingness</u> of the consumers determines who gets what goods and services.

B. Read the following account of the distribution of goods and services at the Leland County Fair and then list examples of each distribution in the form provided under the passage.

Leland County Fair

In 1926 the Leland County Fair Association was formed by 150 interested residents of the county. These charter members purchased land and erected permanent buildings at Reston, approximately in the center of the county. They wanted a fair each year where people could come and see the agricultural and industrial products of the county and enjoy themselves with refreshments and amusements at the same time. By 1942, the Leland Fair had become so prosperous that the Board of Directors decided to abolish the admission fee of fifty cents. This made it possible for persons to enjoy the frequent band concerts and the agricultural and industrial exhibits free of charge. Even the seats in the grandstand for the numerous horse races and shows could be purchased for as little as $1. Of course, there were better seats at $3 and $5. The best grandstand seats were reserved for the county government officials and their families. Each of the charter members also received four excellent reserved seats nearby. Hundreds of small amusement and refreshment stands lined the streets of the fairgrounds. Ferris wheels, caterpillars, electric bump-cars, and all kinds of novel and exciting rides were erected during fair week for those who had the courage and the money

to enjoy them. In a week's time some people spent next to nothing, others as much as $50; but everyone could find some enjoyment, some change from their daily routine at the County Fair.

Table I

Distribution of Goods and Services:
(At the Fair)

Equal Distribution	By Status	By Ability and Willingness

C. Now, leaving the fair, what other examples of each type of distribution can you think of in our society or other societies?

Table II

Distribution of Goods and Services
(Other Examples)

Equal Distribution	By Status	By Ability and Willingness

II. Second Situation: The ability and willingness of consumers to buy

A. Because the ability and willingness of the consumer to buy is such an important factor in the distribution of goods and services the following account of one family's day at the fair illustrates in more detail this third type of distribution.

A day at the Leland County Fair was an annual event for the Jorgensen family, and for months they had been setting aside money for use at the fair. Mr. Jorgensen had budgeted twenty dollars and his wife fifteen for purchases at the fair. Eric, who was sixteen, had saved nine dollars from money earned mowing lawns and doing odd jobs during the summer months, while fourteen-year-old Ingrid had kept aside five dollars from her allowance and baby-sitting money. The youngest member of the family, eight-year-old Kathy,

had struggled to save two dollars from her weekly allowance.

The rides along the midway could not be reached soon enough for the three children. After two wild rides on the tilt-a-whirl Ingrid began to feel a little woozy and Eric was just tired of rides, but Kathy had only begun. She took rides on two other spine tingling attractions while the rest of the family watched. Kathy and Eric walked through the pig and sheep barns, while the others went to see "The State's Finest Horse show," for a dollar. As the pair wandered about the fairgrounds the roar of a motorcycle sideshow droned in their ears. It proved to be irresistible and Kathy asked Eric to loan her a dollar so she would have some money left for lunch. Eric gave the ticket seller two dollars and the two walked in to see the dare-devil riders do their stuff. It was a long and exciting show and both agreed, the highlight of the fair for them. There had even been a chimpanzee trained to ride around the inside of a huge barrel. As they walked out of the noisy, smoke-filled tent, Eric spotted the rest of the family strolling down the midway.

When they reached their parents, Eric and Kathy suddenly realized it was past twelve o'clock and they were hungry. Mrs. Jorgensen remembered that the Reston Grange had a tent nearby and they always had the best lunches at the fair. This year's menu included Mr. Jorgensen's and Eric's favorite southern fried chicken with all the trimmings for $1.25, double deluxe hamburgers with French fried potatoes and cole slaw for only 50¢, extra thick jumbo milkshakes, 25¢. And who could pass up some of Grandma Olsen's homemade pie and ice cream for only a quarter? Kathy's appetite for hamburgers and milkshakes was at its peak by now. The others ordered the chicken dinner and homemade pie. Ingrid wasn't able to finish her chicken, and so she didn't order any pie. Eric was only too happy to oblige her by eating the rest of her chicken.

The kids had gained their second wind after lunch and were all set to hike off together to see the other features of the fair, but first they made arrangements to meet their parents in the commercial and industrial displays building later in the afternoon. Along the midway one could buy a wide variety of souvenirs for fifty cents each, and balloons on sticks for a quarter. Amusement park rides were also twenty five cents. Eric felt badly about not bringing his girlfriend to the fair so he felt obligated to get her a souvenir key chain. Ingrid wanted to add another pennant to her growing collection on her bedroom wall. She finally found a beauty with a show horse painted on it. By now, Kathy had only one quarter left of her two dollars and was undecided as to whether she should spend it on cotton candy or a balloon. She finally chose the balloon since it would last longer and be much more fun. After they had taken in a few of the free exhibits Kathy began to complain of being tired and of having sore feet, so the three started toward the commercial building earlier than planned.

They didn't find their parents immediately and many of the exhibits here were quite fascinating, even for Kathy. There were booths where free samples of cheese were given away, demonstrations of the latest kitchen gadgets, and displays of recent developments in agricultural machinery. Eric began to toy with the idea of buying a ratchet wrench as a birthday gift for his father. He could have bought one for $4.50, and almost did. Then his eyes

caught sight of a kit of wrenches which he could easily attach to his motorbike. It wasn't that he didn't want to buy his father the wrench, but--well, that kit would be so useful and, anyway, it was a dollar cheaper than the ratchet wrench. He had just purchased the kit when his father walked up with a ratchet wrench in his hand. It so happened that this was the only item he had seen at the fair that he both wanted and could afford. Ingrid wanted to buy something for both her mother and father. The sight of a lady demonstrating cake decorators gave her the idea of buying a decorator set for her mother, and then using it to make a cake for her father's birthday. She purchased the set for $1.25, and presented it to her mother. Mrs. Jorgensen was also interested in the booth displaying kitchen gadgets such as knife sharpeners, can openers and potato peelers. She spent a total of $7.50 on an assortment of such things.

It had been a long day and when eight year old Kathy began to cry because her balloon popped and Ingrid began to tease Eric about the gift he had bought for his girlfriend, Mr. Jorgensen headed toward the parking lot. For the Jorgensen family at least, the Leland County Fair was over.

B. Using the information from the preceding story fill in the amounts spent on each of the items in the blank table below:

Table III

Original Money (Income)	Amount spent on:					
	Rides	Shows & Side-shows	Food	Souve-nirs	Gadgets or Merchan-dise	Total Money Spent
Mr. Jorgensen						
Mrs. Jorgensen						
Eric						
Ingrid						
Kathy						

C. To get an idea of how increased ability to buy affects one's willingness to buy, study the statistics in Table IV and then follow the directions for establishing a simplified budget.

Table IV

Personal Income Received by Each Fifth and the Top Five Percent of Families and Unattached Individuals (Consumer Units)*

Fraction of the Population		Percent of Total Income	Average Income in each bracket (In 1964 Dollars)	Group
Lowest 1/5		4.6%	$ 1,662	1
Second 1/5		10.9%	3,966	2
Third 1/5	95%	16.3%	5,938	3
Fourth 1/5		22.7%	8,241	4
Fifth 1/5		45.5%	16,505	5
Top 5%		19.6%	28,482	6

Select one of the income groups which you will use in determining what influence ability to buy has on willingness to buy:

*Adapted from Statistical Abstract of the United States, U. S. Department of Commerce, Bureau of the Census, 1964.

On the basis of the group you chose, decide how much money you would set aside for each of the seven categories listed in the following budget:

Simplified Estimated Budget For A Yearly Income of _____ (fill in the amount for the income group selected from Table IV)	
Budget Item	Amount
Taxes	_____
Food	_____
Clothing	_____
Housing	_____
Automobile	_____
Recreation	_____
Medical	_____
Savings	_____
Miscellaneous	_____
Total	_____

Now select another income group either higher or lower than your first choice and make another simplified budget at that income level.

Simplified Estimated Budget For A Yearly Income of _____	
Budget Item	Amount
Taxes	_____
Food	_____
Clothing	_____
Housing	_____
Automobile	_____
Recreation	_____
Medical	_____
Savings	_____
Miscellaneous	_____
Total	_____

1. Which budget items showed the most change as you moved from one income level to another?

2. What conclusions can you come to about a change in a person's ability to buy and its affects on his willingness to buy?

III. Third Situation: The businessman as a consumer of goods and services

A. The amount of goods and services consumed by a businessman in the operation of his firm will also depend upon his ability and willingness to buy. An examination of a businessman's consumption expenditures, however, shows that his ability and willingness to buy are based on somewhat different decisions than those of the individual consumer.

The ability of the individual consumer to buy is based on his income plus the amount of credit he is able to get; the businessman has two other ways of increasing his ability to buy - depreciation allowances and retained profits. Both of these will be explained in the imaginary case study that follows.

The willingness of a businessman to buy goods and services also depends on somewhat different decisions than those of the individual consumer. The average individual desires goods and services for his own consumption in the present, while the businessman as businessman consumes in the present with his eye more on the future desires of consumers. For this reason his willingness to buy <u>now</u> is determined by his estimation of what his future sales will be. This estimate of the future is based upon the experiences of the businessman in the past. He is concerned with general business conditions, the prospects for the industry of which he is a part, and the prospects for his particular firm. All of these are also part of the imaginary case study.

The Ralston Camera Company

Robert Ralston started making simple box cameras back in 1946. His cameras cost a few dollars more than the other box cameras on the market but the quality of the material he used and the careful workmanship made them sturdy and dependable. They sold very well and by 1950 Ralston found it necessary to expand his production in order to meet the purchase orders for his cameras. In addition to increasing the production of his box cameras, he decided to start producing a high quality camera for use by professional photographers. The 1948 expansion cost $350,000. He was able to borrow $100,000, enough to cover the cost of expanding the box camera production, from a bank. But the bank did not want to risk investing in the professional camera project. He had $50,000 in personal savings, but he still needed an additional $200,000 to start producing his professional camera. He decided to change the form of his business from an individual proprietorship to a corporation. This meant that, instead of being the sole owner of his business and taking all the risks himself, he could now sell shares of stock which entitled the buyers to a part of the ownership of the Ralston Camera Company. The stock

holders now shared a limited part of the risk, and in return they also shared in the profits if the company made any profits.

The Ralston Pro II, as the revised model was called, was an immense success. The same use of rugged materials and skilled craftsmanship that led to the continued success of the Ralston box camera established the Pro II as a first-rate camera among professional photographers. From 1948 to 1965 the Ralston Corporation paid good dividends to its stockholders except in 1959 when all the camera and related supplies industries suffered from a reduction of sales.

Each year, before making any dividend payments to the stockholders, Ralston set aside some of the corporation's income to cover the cost of the machinery and other equipment worn down in the process of production. The worth of the machinery and equipment declined somewhat each year, or as the economist puts it, it depreciated. By making allowances for this depreciation, the corporation had accumulated enough money to replace the machinery and equipment when it became outdated or worn out in 1965. The corporation also retained some of the profits each year so that it could expand the business without having to borrow large sums from a bank or issue more stocks in the company.

Business was very good for the period from 1960 to 1965 and conditions seemed to indicate a continuing prosperity. The general level of business activity is an important consideration for all businessmen in determining their willingness to invest in goods and services, but for the camera industry it is especially important. Cameras are luxury items and, consequently, their sales are reduced faster than more necessary things like food and clothing when business activity decreases. Mr. Ralston felt that the generally prosperous conditions would continue.

In fact, he believed that people would even spend more dollars to get a camera designed for amateur photographers. The Pro II sold for $580 and was therefore too expensive for the serious amateur. However, if he could produce a good model for around $150, he felt that he could compete sucessfully with the imported foreign cameras in that price range.

Using the depreciation allowances to purchase new machinery for the production of his two established models and the retained profits to buy machinery for the new $150 model (the Ralston Flex), Ralston decided in April of 1965 to again expand the company. The Ralston Flex was scheduled to be available by October 1 in time for the usually heavy Christmas season sales.

1. At the two points in the story where the Ralston Camera Company decided to expand, what different circumstances might have made them unwilling to expand?

2. The Ralston Company's ability to purchase production equipment was determined differently in the two expansion periods. What factors determined the company's ability to buy in each expansion period?

B. Assignment: The following story is incomplete. It creates the kind of situation a businessman might face. Using what you have learned about the relationship between ability and willingness in the Ralston Camera Company story, put yourself in Mr. Delebar's position and choose one of the three alternatives presented. There is no one correct choice. However, you should be able to justify your choice in terms of ability and willingness--the main factors influencing your decision. Complete the story by having Mr. Delebar come to a decision and giving an explanation of the reasoning behind the decision.

The Delebar Company

In 1922 George Delebar established a small factory to produce electric window fans. He set up a corporation and his uncle and three friends supplied him with $4,000 in return for 40 percent of the stock. After some setbacks during the 1930's, the company was quite successful from 1940 to 1950. From 1950 to 1962, the sales of Delebar window fans declined steadily due to the increased demand for air-conditioners. The decline in sales stopped during the period from 1962 to 1965 with yearly sales remaining fairly constant at 16,000 fans per year. This is a substantial reduction from the peak production of 24,000 fans in 1950, but it is adequate enough to keep the company operating.

Most of the present production equipment was purchased in 1948 and is now worn out. Mr. Delebar must make a decision about the future of his small corporation. General business conditions are very good. So good, in fact, that more and more people have the money and the desire for devices to cool their homes. The problem for the Delebar Company is that the large number of those persons are now able and willing to buy air-conditioners or large multi-speed fans and, consequently, the demand for the $15 Delebar window fan with a ten inch blade has declined.

To replace enough equipment to allow the company to continue producing around 16,000 of the 10 inch window fans per year would require an investment of $20,000. Through depreciation allowances and retained profits the company has saved $10,000, and the additional $10,000 could be loaned from a bank.

Mr. Delebar is also considering the possibility of discontinuing the production of 10 inch window fans and switching to the production of 24 inch portable fans. The roll-around 24 inch portable fan competes more favorably with air-conditioners, but many companies are already producing such fans. According to Mr. Delebar's calculations, it would cost $50,000 to purchase the equipment necessary to start production on 24 inch portable fans and this would mean selling additional stock in the company to raise the extra $30,000.

A third alternative would be to switch production to large 36" fans for attic installation. These large exhaust fans are often used even in buildings and homes that have air-conditioning. This type of fan is not usually sold in department stores, however, and this would mean that the Delebar Company would have to find new retail sales outlets for its product. Here again the investment would be around $50,000 for new equipment with $30,000 coming from additional stockholders.

Unit 7: Definition of Flows

The dynamic nature of economic activity may be viewed as a <u>continuous</u> or <u>circular</u> interaction between two flows: the flow of goods and services and the flow of money used to buy the goods and services.

I. First Situation: Introduction to the Two Related Flows

A. The notion of economic flows may be illustrated by a series of diagrams which trace in some detail the various stages in the production of a wool suit from raw wool to finished product. In this instance we will actually retrace the stages of production from consumer through retailer, wholesaler, tailor, weaver and farmer. At each stage in the process special attention will be given to the successive changes which occurred in the value of the suit. The stages are illustrated by the narrative and diagrams below:

The Route of a Suit

Mr. Chasnik's job requires him to wear a suit every working day because he must meet customers in his office. But he must also go into the machine shop and inspect the progress of the work being prepared for his customers. This means that his suits receive a lot of wear and tear, and frequently he must buy a new suit. Obviously, he doesn't drive out to a sheep ranch and shear a few sheep. Neither does he weave the cloth or tailor his own suit. How then does the wool get from the sheep's back to Mr. Chasnik's back? Simply put, Mr. Chasnik goes to a store and buys a suit. But there is more to it than that. Where does the retailer at the store get the suit? Does he shear the sheep and so on? No, usually he buys the suit along with several other suits from a wholesaler. The wholesaler in turn bought the suit and hundreds of others from a tailoring company that made the suits from woolen cloth that they purchased from a weaving mill. The weaver purchased the raw wool from a sheep farmer and the farmer, of course, took the wool from the backs of his sheep.

These stages in the production of a suit are probably already familiar to you. We can make a simple diagram to show the route of a suit from farmer to consumer.

Diagram 1

As the wool goes through these stages of production, money is exchanged at each step in return for the increasing value that is added to the original wool as it moves along to the consumer.

At each step in the production an exchange takes place. Money is exchanged for goods and services. The whole process of changing the wool on the sheep's back to the woolen suit on Mr. Chasnik's back results in a flow of money in exchange for a flow of goods and services. We can examine these flows at each stage of production and make a diagram that represents these flows. Each new diagram will show the flows for the particular stage of production under discussion and will also show the previous stages of production that have already been covered. The last diagram will then show us a complete picture of the two flows.

The farmer feeds and cares for his flock of sheep. He also shears the sheep and transports the wool to the weaving mill. Of course, when he sells his wool to the weaver, he sells more than enough for one suit; but we want to make our diagrams as simple as possible. Therefore, we will estimate how much money he receives for the wool that is needed to produce only one suit. Let us say that he receives $5 from the weaver. This $5 represents the value he has added to the wool by getting the wool from the back of his sheep to the weaving mill.

Diagram 2

Stage of Production	Value Added	Income Generated
Weaver		
↑		
Farmer	$5	$5

The weaving mill cords the wool, spins it into thread and weaves the thread into cloth. The weaver then sells the cloth to a tailor for $15. But the weaver has included the $5 he paid to the farmer in his price. We must subtract this $5 from the $15 in order to find out the amount of value that the weaver added to the raw wool.

Diagram 3

Stage of Production	Value Added	Income Generated
Tailor		
↑		
Weaver	$10	$10
↑		
Farmer	$5	$5

The tailor cuts the cloth and makes it into a suit. He then sells the suit to a wholesaler who pays him $40. Again, we subtract the $15 the tailor paid

the weaver for the cloth and find that the value the tailor added equals $25.

Diagram 4

Stage of Production	Value Added	Income Generated
Wholesaler		
↑		
Tailor	$25	$25
↑		
Weaver	$10	$10
↑		
Farmer	$5	$5

The wholesaler buys large quantities of suits. For example, suppose that the suit we have been talking about was a size 40 suit made of worsted wool. The wholesaler may buy a thousand such suits. In turn, he transports and sells these suits to several retail stores. Let us say that he sells the particular suit we have been talking about to a retailer for $50. The ten dollars of value added is the income the wholesaler receives in return for his services.

Diagram 5

Stage of Production	Value Added	Income Generated
Retailer		
↑		
Wholesaler	$40	$40
↑		
Tailor	$25	$25
↑		
Weaver	$10	$10
↑		
Farmer	$5	$5

Finally, the retailer displays several different kinds of suits, he helps Mr. Chasnik make his selection, and takes care of the alterations needed to make the suit fit properly. Mr. Chasnik purchases the suit for $75. We now subtract the $50 that the retailer paid to the wholesaler when he bought the suit. The $25 then represents the value added to the suit by the retailer.

Diagram 6

Stages of Production	Description of Transactions	Value Added	Income Generated
Consumer ↑	Consumer pays $75 to Retailer.		
Retailer ↑	Retailer pays $50 to Wholesaler for suit. Displays suit in store and sells it to Mr. Chasnik for $75.	$25	$25
Wholesaler ↑	Wholesaler pays $40 to Tailor for finished suit. Wholesaler transports suit and sells it to Retailer for $50.	$10	$10
Tailor ↑	Tailor pays $15 to Weaver for cloth, designs and cuts suit. Sells suit to Wholesaler for $40.	$25	$25
Weaver ↑	Weaver pays $5 to Farmer for wool. Weaves wool into cloth. Sells cloth to Tailor for $15.	$10	$10
Farmer ↑	Farmer shears sheep and sells wool for $5 more than his costs.	$5	$5
Arrows indicate flow of goods and services.	Total	$75	$75
		Arrow indicates a flow of money.	

The total amount of value added, $75, is the same as the total amount of income created and this amount is the same as the retail price of the suit.

Will the total value added, the income generated, and the retail price always be the same? The answer is yes. Suppose that the retailer reduced the sales price to $65. After subtracting the $50 he paid for the suit, we would find that the value he added was $15. His income would also be $15. Putting these $15 figures into the last diagram, we would find that the total value added and the total income created would again be equal to the retail price. In this case they would all be $65.

Suppose that the retailer wanted to sell the suit for $100. You looked at the suit in his store and decided that the "value" of the suit was not

$100. You are now using the word "value" in a different way than we have been using it in this illustration. Perhaps you feel that the "value" of the suit is only $25. The economist has no way of knowing the different "values" that the suit will have for thousands of people.

In this illustration, the value of the suit is determined by the actual sale price. When one person is able and willing to buy the suit, whatever price he pays is considered as the value of the suit. If one person is able and willing to pay $100 for the suit, then in this case the value added by the retailer would be $50 ($100 retail price minus $50 price the retailer paid the wholesaler = $50 value added).

What about the suits that the retailer has not sold? How will we find the total value added for these suits? The unsold suits are part of the retailer's inventory. All the unsold merchandise in the store is considered as the retailer's inventory. Since he has not, as yet, sold these suits, obviously he has not gained any income from them and until he sells them he has not added any value to them. We, therefore, say that the total value added for an unsold suit is equal to the last sales price in the chain of production. In our illustration this is $50, the price the retailer paid to the wholesaler.

B. The steps involved in the "Route of a Suit" are basic to the production and sale of all goods and services. See if you can apply them to the following circumstance:

Your parents have decided to purchase a new maple dining room set. The furniture which they have picked out cost $110 for a table with six chairs. Trace the stages of production for the furniture in the same manner as we traced the production process of the woolen suit. To do this you must account for the logging operation when the trees were felled, the sawmill which makes lumber from the logs, the furniture factory, the wholesale furniture warehouse and finally the retail furniture store where the furniture was purchased. Using a diagram, show the value added to each stage in the process, illustrate the direction of the two flows and construct a diagram similar to Diagram 6 showing the relationship between value added and the income to factors of production.

In order to set up a diagram of the flows you will have to know the sale price at each stage of production. These are listed below:

1. Loggers sold trees to sawmill for $10.

2. Sawmill sold lumber to manufacturer for $20.

3. Furniture manufacturing company sold finished product to wholesale dealer for $60.

4. Wholesaler sold transported furniture to retailer for $80.

5. Retailer sold displayed furniture to consumer for $110.

II. Second Situation: Expanding the Concept of the Two Related Flows

A. This situation will be a class discussion moderated by the teacher.

B. By examining the total (aggregate) picture of economic events in a society we can see relationships between these events that escape us when we look at them only in isolation. An economic event occurs every time a person chooses to produce or consume something that has value to other persons in the society. Obviously, billions of economic events occur every day. Each economic event is an economic fact. We must have some basis for arranging these facts in an orderly manner if we want to understand man's economic behavior. Consequently, we must have a structure that provides a means for selecting and collecting the billions of economic facts into a meaningful pattern.

Our examination of the concept of flows in this unit has developed some of the elements needed for a structure of economics. We have examined the following relationships:

1. In the production process, value is added to the product in each stage of production (i.e. farmer, weaver, tailor, etc.)

2. The amount of value added in each stage of production generates an equal amount of income.

3. The total value added to the total of all goods and services produced in a given year is equal to the total amount of income generated in a society during that year.

4. The income received in a given year by all the consumers in a society in return for their labor services may be used in total or in part to purchase all or part of the goods and services produced in a given year.

The development of a structure involves an expansion of all of these relationships especially the more complex relationships stated in three and four. The third relationship contains the concept of an aggregate (total of totals) of the value added in the production process for a given year which economists refer to as the Gross National Product or simply GNP.

The concept of the gross value of production (GNP) in a year promises to be a useful measuring device for comparing the performance of the economy in one year with the performance in another year. Calculating the GNP and using it as a measuring device provides a means for organizing the flows of economic activity into a systematic pattern. Units eight and nine deal with an expansion of the GNP concept.

The fourth relationship, which deals with the continuous nature of the flows, will be the primary consideration for the studies in units ten, eleven, twelve, and thirteen.

Unit 8: Measure of a Nation's Income

In comparing the GNPs of different periods consideration must be given to the fact that prices and the value of money change from year to year.

I. First Situation: Changing Prices and the Value of Money

The following story highlights the relationship between price changes and the value of money:

The Good Old Days

The music from Mark's bedroom boomed into Mr. Crandall's ears as he entered his home. "Is that boy deaf?" he shouted to Mrs. Crandall. "It's another new record that Mark picked up this afternoon," she replied. "Another record--that boy goes through money like water. Must he spend every cent he earns? He's earning three times as much as I was at his age, but all he does is spend, spend, spend--never a thought to saving."

As Mrs. Crandall set the supper table she said sympathetically, "Now, John, he doesn't spend any more than the other boys and that's the first record he's bought in a long time."

"Just the same, I think we ought to talk about this business after supper and maybe we should include Janie in the discussion, too."

After supper Mr. Crandall asked Mark and his sister to draw up a list of all the things they had bought during the last week. While they were doing this, Mr. Crandall went to the attic and dug out the old budget book his father had made him keep in 1928.

As he came back into the living room, he felt quite confident that this book would convince Mark and Janie that they were spending entirely too much. "Look here," he said as he opened the book on the table, "this is my expense account for the week of November 20, 1928." Mark turned to his sister and whispered, "Looks as if we're in for the 'good old days' bit again."

Mr. Crandall felt sure he would clinch his argument by pointing to the fact that he was able to save $.50 a week out of his weekly earnings of $5.

Mark handed his list to his father. He earned $15 a week working part-time in a supermarket, which was three times as much as his father had made, but he was saving only about $1 a week.

Mr. Crandall asked, "Can you give me one good reason why you shouldn't be saving $5 a week?"

"Well, they take $3 off for income tax; so I really only have $12 a week," answered Mark. He knew that $12 was still a lot more money than the $5 his father received, but somehow he just couldn't imagine saving $5 of those $12

each week. After all, he thought, I'm not a little kid anymore. I'm a senior in high school and $7 a week--impossible. He sensed that there was something unfair about his father's comparison but couldn't quite put his finger on the difficulty.

At this point in the discussion, Mrs. Crandall injected another idea. She had been reading her husband's 1928 budgets and had been thinking back to her own high school days. "Look at this page, John." She spread the book out on the coffee table:

Week of November 20, 1928

Earnings: $5	Expenses:	
	4 ice cream sodas	$ .60
	5 gallons of gasoline	.75
	1 long-sleeve dress shirt	2.00
	1 haircut	.50
	2 movie tickets	.50
		$4.35
	Saving	.65
	Total	$5.00

Mark's expression brightened as he realized what his mother was driving at. He grabbed a tablet and quickly jotted down some figures. "Take a look at this," he said. "This is what I would have to spend just to get the things on your list."

4 ice cream sodas	$ 1.00
5 gallons of gasoline	1.60
1 dress shirt	4.75
1 haircut	2.00
2 movie tickets	1.80
	$11.15
Plus the income tax I have to pay	3.00
Total	$14.15

Mr. Crandall studied Mark's figures carefully. Of course he was aware of the fact that prices had changed since 1928, but he had never realized how much they had changed. He stood up, tucked his budget book under his arm and turned to his fourteen-year-old daughter, "Janie, I guess we'll have to raise your allowance."

II. Second Situation: Establishing a Price Index

A. The following table is used to illustrate the need for an average of prices when one wishes to compare the prices of different years:

Table 1: Fictional Prices for Three Given Years

Item \ Year	Prices		
	1940	1950	1960
A tube of toothpaste	$ .50	$ .40	$ .70
One pound of steak	.30	.60	1.50
One pound of potatoes	.20	.15	.10
One baseball bat	1.40	3.35	4.70
One car wash	.60	1.50	2.00
Total	$3.00	$6.00	$9.00

B. When the average price levels for two or more years are to be compared:

1. The average price level of one year must be chosen as a base.
2. The average price level in the base year is represented by the number 100. This number becomes the common denominator or base number.
3. The average price levels of other years can then be expressed as index numbers greater than, equal to, or less than 100. The index number for any one year is called a price index.

A price index may be computed by using the following formula:

$$\text{Price index} = \frac{\text{Price index for base year (100)} \times \text{Price level in a given year}}{\text{Price level in the base year}}$$

Using this formula, compute the price index for 1950 and 1960 in Table 2 below:

Table 2: A simplified Example of a Price Index

Year	1940	1950	1960
Total of prices for each year	$3.00	$6.00	$9.00
Average of prices for each year (Total ÷ 5)	$ .60	$1.20	$1.80
Price index (1940 as the base year = 100)	100		

Compute the price index for 1940 and 1960 in Table 3 below:

Table 3:

Year	1940	1950	1960
Total of prices for each year	$3.00	$6.00	$9.00
Average of prices for each year (Total ÷ 5)	$ .60	$1.20	$1.80
Price index (1950 as the base year = 100)		100	

III. Third Situation: Comparing GNPs in Term of Constant Dollars

A. Table 4 sets out the information needed to compute the GNPs in terms of Constant Dollars with 1940 as the base year. What would the Constant GNPs for 1950 and 1960 be?

Table 4: Changing GNP in Current Dollars to GNP in Constant Dollars

Year	Price Index	Current GNP*	Constant GNP
1940	100	$ 500	
1950	200	1,000	
1960	300	2,100	

B. Using 1954 as the base year, calculate the Constant GNPs for the years given in Table 5.

*Figures are fictional.

Table 5: Translating GNP from Current to Constant Dollars*

Year	Price Index Number	Current GNP	Constant GNP 1954 = 100
1929	57.4	$104.4 Billion	
1933	44.2	56.0 "	
1941	52.9	125.8 "	
1945	68.0	213.6 "	
1954	100.0	363.1 "	
1961	116.2	521.3 "	
1964	119.8	622.6 "	

Source: Department of Commerce, "Survey of Current Business," February, 1962 and U. S. Congress, Joint Economic Committee, "Supplement to Economic Indicators," Washington, D. C., 1964.

*Unlike the figures in previous examples these figures are the actual GNPs for the years given.

SCARCITY (Units 1-6)

FLOWS (Units 7-14)

COORDINATION (Units 15-18)

UNFOLDING THE CONCEPT OF FLOWS

Unit 7 / Unit 8 / Unit 9

Two Flows ---------- Size of Flows ---------- Economic Growth ------
(Increasing GNP)

Goods & Services (GNP=$)

Money Income ($GNP)

Prices & Value of Money

GNP Current Constant (Real)

1. Production (outputs)
2. Production vs. Productivity (efficiency)

output / inputs

Unit 10 / Unit 11 / Unit 12

---- Breakdown of Flows (GNP) ---- Determining the Size of the Flows ------ Role of Money & Financial Institutions

Two subflows:
- Spending (consumption)
- Saving (investment)

Four buyers:
- Consumers, business, Government, foreigners

Consumption (Spending) / Investment (Saving) — multiplier

Functions & Kinds of money

Financial Institutions

Money supply (including created deposits)

Unit 13 / Unit 14 /

----- Monetary Controls & Size of GNP ---------- International Trade

Federal Reserve System

Powers of FRB

Monetary & Fiscal Policies

(Flows of Goods & Services and of Money over national boundaries)

Basis of Trade
Balance of Payments
Methods of Payments
Foreign Economic Policies

Unit 9: Definition of Economic Growth

In Units 7 and 8 you studied some of the problems involved in measuring the size of the Gross National Product and in making comparisons between the GNPs for several years. Those units hinted at the idea that the reason for taking such great care in calculating GNP figures was because these figures could be used to measure the economic health of a nation. One of the most important aspects of economic health is the amount and rate of economic growth. The study of economic growth in this unit pulls together many of the concepts previously studied and also sets the stage for the concepts that will follow. This unit, therefore, is not only numerically the mid-point of the course but also a kind of plateau from which we can see the full picture of the economic concepts already covered and also catch a glimpse of the higher ground ahead.

I. First Situation: The Problem of Measuring Economic Growth

A. As a boy grows into a young man he may become taller, heavier, or able to hit a baseball a greater distance. All these things can easily be measured. He may also become more honest, more kind or more brave. These things are much more difficult to measure. Height and weight are quantities for which we have standard units of measurement such as inches and pounds. Honesty and bravery are qualities for which we have no standard measures. Quantities are more easily measured than qualities; consequently, when we say a boy has grown we usually mean he has increased in height or weight.

B. Economists face a similar situation when they try to measure economic growth. Both the quantity and the quality of goods and services produced by a nation may change over a period of time. Read the two advertisements for portable record players given below. How would you measure in dollars and cents the differences in quality between the two record players?

Advertisement for 1929 Model

The Super De Luxe is the equal of any portable phonograph ever made regardless of price! We have improved it, refined it in appearance, added new features and, best of all, we've reduced the price. Now it is vastly superior in tone, in quality, in appearance, and durability. It's the super value of all portables. The greatest and most outstanding feature of the Super De Luxe is its powerful, vibrant pure tone.

Another super feature is its long playing, highly perfected motor--a genuine Silvertone motor--absolutely the best that has ever been built into a portable, regardless of name, style or price. With one full winding it plays three 10-inch records.

It is the lifetime instrument--sturdily built to endure every hardship of rough usage indoors and outdoors the whole year through. All exterior hardware is solid brass with harmonizing finish. It won't rust, it won't come

loose. Case covered with durable, genuine Du Pont Fabrikoid in dark rich Spanish Blue or Red. Needle cup has spring cover to prevent needles from falling out.

Advertisement for 1964 Model

Compact . . high-quality sound at a low price. Full stereo from two removable 4-inch speakers. Powerful amplifier; volume, tone, balance controls. Automatic 4-speed changer, shut-off . . order 45-rpm adapter below. Dual synthetic sapphire needle. Washable blue covering, white interior and ends. 9 1/2 x 19 1/2 x 15 inches.

II. Second Situation: Measuring Economic Growth in Terms of Population

A. The discussion in the first learning situation has illustrated the difficulty of measuring changes in the quality of goods and services over a period of time. Until someone develops a method for measuring changes in quality that would be acceptable to the great majority of persons, we will have to be content with measuring economic growth in terms of quantity.

B. There is one other important change that takes place in a society over a period of time that affects the measurement of economic growth. Since it is a quantity that can also be measured, we will add it to our definition of economic growth. The individual case of Mr. Marcel discussed in class contains an idea that has important implications for measuring the economic growth of the whole society. Can you detect the idea and transfer it to your conception of economic growth?

C. The Marcel family income is summarized in Table I.

Table I: Mr. Marcel's Income Related to the Size of His Family

Year	Income	Family Size	Amount of Income Per Person
1955	$6,000	3	$2,000
1960	7,500	3	2,500
1965	7,500	5	1,500

D. Table II presents, on a national basis, an application of the idea contained in the Marcel case.

Table II: Constant GNP Per Capita for Selected Years

Year	1 GNP 1929 Index = 100	2 Population (Approx.)	3 Constant GNP Per Capita
1900	$ 37 Billion	76 Million	$ 487
1910	55 "	92 "	598
1920	73 "	106 "	689
1930	95 "	123 "	772
1940	121 "	132 "	917
1950	187 "	151 "	1,238
1960	480 "	178 "	2,697

Source: Figures in column 1 and 2 are rounded and are taken from U. S. Bureau of the Census, Historical Statistics of the United States, Colonial Times to 1957, Washington, D. C., 1960, pp. 8 and 139 (1960 figures derived from data in U. S. Bureau of the Census, Statistical Abstract of the United States, 1964, Washington, D. C., 1964).

1. Using only the figures in column 1, what kind of statements could be made about the economic growth of the U. S. between 1900 and 1960? (between 1920 and 1930, 1950 and 1960?)

2. How do these statements need to be modified when population growth is considered? (column 1 compared to column 3)

III. Third Situation: Economic Growth - Inputs and Efficiency

A. For some purposes such as measuring the military potential of a nation, growth can be measured merely on the basis of changes in the real GNP. For other purposes such as measuring the economic standard of living in a society it is necessary to consider the size of the population in relation to the size of the real GNP.

In what ways can the amount of real GNP per capita be increased? Increasing the amount of real GNP per capita depends upon the ability of society to increase the real GNP faster than the increase in its population. This learning situation will not take up the causes of population increase; it will concentrate instead upon the sources which promote changes in the real GNP.

B. As you read the following brief account of a small grasscutting business set up by several teen-age boys, you will notice that the

total value of the output (GNP) increases each month. The source of the increase in output for July, however, is different from the source of the increase in output for August.

First Illustration:

Relax, and Leave the Grasscutting to Us

Larry, Jerry, and Tony, three teen-age boys, set up a small grasscutting business last summer. By pooling their resources, they were able to guarantee their customers prompt and continuous lawn care over the whole summer. They received $36 in the month of June for their services. Since the total number of hours worked by the three boys was eighteen hours, they calculated the value of their output per hour as follows:

$$\frac{\text{Total Value of the Output}}{\text{Total Man-hours Worked}} = \text{Value of the Output Per Man-hour}$$

$$\frac{\$36}{18 \text{ Man-hours}} = \$2 \text{ Per Man-hour}$$

Toward the end of June, four new customers asked to have their lawns cared for by the boys. Rather than reduce their swimming and baseball time in order to cut the additional lawns, the boys decided to add another partner, Mike, to their business.

In July, the four boys worked a total of twenty-one hours and received $42 for their services.

During the month of August, the four boys worked out a system in which they cut the lawns in teams. One boy on each team cut the grass while the other took care of all the trimming around plants and walks. Using this new system, they were able to care for the lawns of two additional customers and still reduce the total number of hours worked to twenty. They received $45 in August for their services.

Complete the following table using the information supplied in the story:

Table III: Measuring Output Per Man-hour

Month	Total Value of the Output	Labor Inputs (Total Number of Hours Worked)	Value of the Output Per Man-hour
June			
July			
August			

C. The account of the small grasscutting business allowed us to see the relationship between outputs and labor inputs. By dividing the labor inputs (man-hours) into the output (dollars) we obtained the dollar value of output per man-hour. We will now use this concept of output per man-hour to examine the experience of the whole American economy in two different periods. See if you can apply the ideas that you discussed in the above illustration to the next illustrations.

Second Illustration:

Table IV shows the large increase in the total output (Real GNP) that occurred during the years from 1940 to 1944. What is the source primarily responsible for this increase in output?

Table IV: Outputs Compared to Labor Inputs for 1940 and 1944

Year	Outputs (GNP in 1954 Prices)	Labor Inputs (Man-hours Per Year)	Output Per Man-hour
1940	$205,800,000,000	109,096,000	$1,886
1944	$317,900,000,000	156,676,000	$2,029

The output has increased 54% while the labor inputs have increased by 43%.

Sources: J. Frederic Dewhurst, America's Needs and Resources, Twentieth Century Fund, New York, 1955, pp. 1064-1065; and U. S. Bureau of the Census, Historical Statistics of the United States, Colonial Times to 1957, Washington, D. C., 1960, p. 143.

Third Illustration:

Table V shows an increase in the total output (Real GNP) that occurred during the years from 1949 to 1953. What is the source primarily responsible for this increase in output?

Table V: Outputs Compared to Labor Inputs for 1949 and 1953

Year	Outputs (GNP in 1954 Prices)	Labor Inputs (Man-hours Per Year)	Output Per Man-hour
1949	$292,700,000,000	127,608,000	$2,293
1953	$369,000,000,000	136,448,000	$2,704

The output during this period increased by 26%, while the labor inputs increased by 7%.

Sources: J. Frederic Dewhurst, America's Needs and Resources, Twentieth Century Fund, New York, 1955, pp. 1064-1065; and U. S. Bureau of the Census, Historical Statistics of the United States, Colonial Times to 1957, Washington, D. C., 1960, p. 143.

Notice that in both periods the output per man-hour increased. But in the period from 1940 to 1944 it increased by only $143 per man-hour ($2,029 minus $1,886) while in the period from 1949 to 1953 it increased by $411 per man-hour ($2,704 minus $2,293). These actual figures do not illustrate the two sources of output increases quite as clearly as the lawn cutting example. In that instance it was easy to see that in July the increase was due to increased inputs and in August the increase was due to productivity (efficiency) gains. In actual practice, however, there is no such clear distinction--both sources contribute to the increase in output during both periods. It is possible, however, to make a reasoned guess as to which source, increased inputs or increased efficiency, is primarily responsible for the increase in output during each period. Economists, as do persons in other sciences, call such reasoned guesses hypotheses. What kind of additional information would you need in order to check whether or not your hypothesis was correct?

Unit 10: Composition of the GNP

In order to understand the notion of economic growth, it is necessary to examine the composition of the Gross National Product.

I. First Situation: The Four-fold Division

The following account illustrates the major components of the GNP:

Tivan Economics

The simple economy of the island of Tiva provides us with an example of economic growth that allows us to analyze the process of growth in its most elementary form. The total output on Tiva rose from 480 Tivan dollars in 1958 to 800 Tivan dollars in 1962. The population also increased from 60 persons in 1958 to 80 persons in 1962. In spite of this tremendous growth, the prices that Tivans charged each other remained the same.

The Tivans were content with the increased prosperity, but a few were also interested in why they had become so prosperous. Among these few was a young man named Saka who developed a method of analyzing the process of growth on Tiva.

Saka saw that during the five years, the production of copra and other products derived from the island's abundant coconut trees had increased. He reasoned that the prosperity must in some way be related to this increase and set out to trace the changes in production from year to year. He asked Galta, the chief's brother who was in charge of the copra "industry", for any records that he might have of past production. Although Galta's records were not kept in an orderly fashion, Saka was able to arrange the information in them into two main categories: (1) the money paid out by Galta to his workers and (2) the money he received from those who purchased the coconut products. He listed this information under two headings--IN and OUT--referring to the money that flowed in and the money that flowed out of Galta's business.

Although Galta's copra industry was by far the most important source of inflows and outflows on Tiva it was not the only one. There were also a number of other parts of the economy which contributed to the total flows. Therefore, Saka also used the idea of money and goods and services flowing in and out of these other parts of the economy, which he called sectors.

He called the first part, which included the activities of Galta's business, the <u>business sector</u>. The flow of money and the flow of goods and services in and out of the families on the island he called the <u>consumer sector</u>. The two categories still did not account for all the flows on Tiva. It was necessary to add a <u>government sector</u> and a <u>foreign sector</u> in order to balance the records and complete the analysis.

The system that Saka developed made use of the simple idea that everything that flowed out of one sector of the economy had to flow into some other sector. He reasoned that if a businessman paid out $480 in wages, then that same $480 had to be income to some other sector. In order to record the movement of the $480, this amount had to be entered in the records twice: once as an outflow and once as an inflow. So that the other islanders could understand his system, he illustrated a single entry for them as:

	Business		Consumer	
	Out	In	Out	In
Wages	$480			$480

With this system a person would be able to read at a glance the flow of any item such as wages, consumer expenditures, or taxes. Also, by totaling the items in the business sector, one would be able to tell the total value of the output (GNP).

Saka set up the records for Tiva in 1958 and 1962 as follows:

Table I: Gross National Product for Tiva

1958

	Business		Consumer		Government		Foreign	
Flows for:	Out	In	Out	In	Out	In	Out	In
Wages	$470			$470				
Business Taxes	10					$10		
Personal Consumption		$450	$450					
Personal Taxes			20			20		
Government Purchases		30			$30			
Exports		25					$25	
Imports		-25*						$25
Totals	$480	$480	$470	$470	$30	$30	$25	$25

Note: *Imports are entered as a minus figure under the In column for the business sector.

Table II: Gross National Product for Tiva

1962

Flows for:	Business Out	Business In	Consumer Out	Consumer In	Government Out	Government In	Foreign Out	Foreign In
Wages								
Business Taxes								
Personal Consumption								
Personal Taxes								
Government Purchases								
Exports								
Imports								
Totals	$	$	$	$	$	$	$	$

II. Second Situation: Consumer Sector

In the first learning situation, the idea of a four-fold division of buyers and sellers was presented. The second learning situation is concerned with one of the four sectors, the consumer, in terms of inflows and outflows of money.

By examining the income of some selected individuals in the imaginary town of Elmville, it is possible to account for the principal inflows of money in the consumer sector of an economy. The outflows are also illustrated. Read the short sketches of the five citizens of Elmville given below and use the information contained in them to complete Tables III, IV, V, and VI.

Economic Sketches of Five Elmville Citizens

The pharmacy in Elmville is owned and operated by Mr. Taylor who is able to make about $7,000 per year as the proprietor of his store. He also receives income from interest on $3,000 of municipal bonds which he has accumulated over the years. This interest amounts to $105 per year since these bonds pay a rate of 3 1/2% interest. Of his total income of $7,105 he spends $5,200 on personal consumption (living expenses), $1,050 is paid out in income taxes and $216 in social security payments. The rest of his income is put in a savings account.

Mrs. Crabtree, a widow, lives in the Crabtree family home on the main street of Elmville. The old house is large enough for her to rent rooms during the tourist season. Normally her income from renting rooms amounts to $2,000 each year. She also receives a survisor's pension from the railroad company for which her husband had worked before he was killed in a train derailment. The railroad company pays her $150 a month or $1,800 per year, so her total year's income is $3,800. Her income taxes are $250, and her total expenses for a year are $3,290, allowing savings of $260.

George McCoy is employed in a local ready-mix concrete plant where he is a truck driver. Since the work tends to be seasonal, he is unemployed for four months during the winter months and draws unemployment compensation. His wages amount to $5,200 from the concrete plant, and his total unemployment benefits are $630 a year, for a total income of $5,830 per year. He pays income tax and social security only on the wages he receives in amounts of $530 and $216 respectively. Personal consumption for the McCoys amounts to $5,084 a year.

Mr. Hatfield manages the concrete plant where George McCoy works. He receives a salary of $12,000 and owns stock in the company which pays dividends of $500 per year to Mr. Hatfield. His income tax is $1,650 and social security payments amount to $216 per year. Since he has a mortgage on his new house and a son in college, his personal expenses are higher than the other people's. He spends $8,000 per year for personal consumption and the rest of his income is saved through his life insurance programs and savings account.

The owners of the concrete plant made a major expansion of their plant when a new super highway was built around Elmville. Money for this expansion was borrowed from Mr. Evans, a wealthy financier who retired in Elmville following his wife's death. He had loaned the concrete firm $200,000 at 3% interest, so his income amounted to $6,000. His income tax on this amount of income is $750. His personal consumption expenses are $4,400. The rest of his income goes into savings.

The following tables illustrate the inflows and outflows of money in more graphic form:

Table III: Total Personal Income

Entry:	Taylor	Crabtree	McCoy	Hatfield	Evans	Totals
Wages & Salaries			$5,200	$12,000		$17,200
Proprietors & Rental Incomes	$7,000	$2,000				9,000
Dividends				500		500
Transfer Payments		1,800	630			2,430
Net Interest (or Private Loans)					$6,000	6,000
Government Interest (Bonds)	105					105
Total Personal Income	$7,105	$3,800	$5,830	$12,500	$6,000	$35,235

Table IV: Disposable Personal Income

Entry:	Taylor	Crabtree	McCoy	Hatfield	Evans	Totals
Total Personal Income (Gross)						
Minus Income Taxes & Minus Social Security						
Disposable Income (Net)						

Table V: Personal Savings

Entry:	Taylor	Crabtree	McCoy	Hatfield	Evans	Totals
Disposable Income (Net)						
Minus Personal Consumption Expenditures						
Savings						

Table VI: Summary of Consumer Flows

Total Inflows		Total Outflows	
Wages & Salaries		Income Taxes	
Proprietors & Rental Incomes		Social Security	
Dividends		Personal Consumption Expenditures	
Transfer Payments		Savings	
Net Interest			
Government Interest			
Total Inflows		Total Outflows	

III. Third Situation: Business Sector

If you were president of Strata Airlines and had the responsibility of spending the company's income of $1,500,000, how would you use it? Try to answer this by completing the following balance sheet. Make sure you identify your entries in the Outflow column. Check over your entries carefully. Have you left out any important categories?

Table VII

Strata Airlines
Balance Sheet for 1964

Entry	Inflows	Entry	Outflows
1. Revenues from the Public	$1,500,000	1.	
		2.	
		3.	
		4.	
		5.	
		6.	
		7.	
Total Inflows	$1,500,000	Total Outflows	$

IV. Fourth Situation: The Government Sector

The following tables will be used in a discussion of the activities of the government sector of the economy.

Table IX

Balance Sheet: Government Sector
(1964 figures in billions, rounded off)

Entry	Inflows	Entry	Outflows
Personal Taxes	$ 59	Government Interest	$ 9
Social Security	29	Transfer Payments	38
Corporate Taxes	26		
Total Government Revenue	$114	Total Government Expenditures	$47

Table X

Balance Sheet: Government Sector
(1964 figures in billions, rounded off)

Entry	Inflows	Entry	Outflows
Personal Taxes	$ 59	Government Purchases	$129
Social Security	29	Government Interest	9
Corporate Taxes	26	Transfer Payments	38
Total Government Revenue	$114	Total Government Expenditures	$176

Table XI

Balance Sheet: Government Sector
(1964 figures in billions, rounded off)

Entry	Inflows	Entry	Outflows
Indirect Taxes	$ 59	Government Purchases	$129
Personal Taxes	59	Government Interest	9
Corporate Taxes	26	Transfer Payments	38
Social Security	29		
Total Government Revenue	$173	Total Government Expenditures	$176

Table XII

Final Balance Sheet: Government Sector
(1964 figures in billions, rounded off)

Entry	Inflows	Entry	Outflows
Indirect Taxes	$ 59	Government Purchases	$129
Personal Taxes	59	Government Interest	9
Corporate Taxes	26	Transfer Payments	38
Social Security	29	Government Surplus or Deficit	(-) 3
Total Government Revenue	$173	Total Government Expenditures	$173

V. Fifth Situation: The Foreign Sector

Some of the activities of the foreign sector are illustrated in the next paragraph.

In the story of Tiva we noted a large increase in the production of copra from 1958 to 1962. At the same time exports from Tiva were also increased significantly. These exports were products of the Tivan economy paid for by money from outside Tiva. Suppose that as this production increased, Tivans found that they had to replace some of their equipment and also had to buy better tools if they wanted to increase production further. However, they were so busy producing copra that they had neither time nor raw materials to make these things. One foreign nation, with which Tiva traded, specialized in this kind of equipment, so Tivans decided to buy some tools from this country. This was not the first time Tiva had purchased goods from another country, but always before the value of the exports from Tiva equaled the value of the imports. Suppose in 1962 Tiva exported goods valued at $50 and they imported goods and services worth $45. When Saka sat down to draw up GNP for 1962, he came to the import-export category and wondered how to account for these transactions. The exports were produced on Tiva and should be considered as part of GNP. The imports were to be used in the economy of Tiva, but they were not produced by Tiva's economy. How would you show the net effect of Tivan exports and imports in the accounts?

VI. Sixth Situation: Spending, Saving, and Investing

The meanings which economists give to the terms "saving", "spending", and "investing" are explored in a continuation of the "Tivan Economy" introduced in the first situation.

The prosperity that had come to Tiva since 1958 made it possible for some Tivans to have an income large enough to supply themselves with most of the important things they wanted and still have a little cash left over.

The fact that all the sectors were no longer spending exactly the amount of money they were receiving gave Saka a new problem to solve. He looked over the data for 1963 and attempted to set up a table to trace the flows for that year. This data and the table that Saka prepared are reproduced below:

Tiva
Data for 1963

1. Business paid out $850 in wages, $80 in rent, $150 in interest, and $130 in dividends to the consumer sector.

2. Businesses paid out $90 in taxes and consumers paid out $130 in personal taxes.

3. Government transferred $30 to consumers for social security benefits and unemployment compensation.

4. Consumers purchased $1,000 worth of goods and services from producers.

5. The government purchased $200 worth of goods and services from producers.

6. Businesses invested $300 in new capital goods.

Table XIII: Saka's First Attempt

Flows for:	Business Out	Business In	Consumer Out	Consumer In	Government Out	Government In
Payments to Factors of Production:						
Wages	$ 850			$ 850		
Rent	80			80		
Interest	150			150		
Dividends	130			130		
Business Taxes	90					$ 90
Personal Taxes			$ 130			130
Government Transfers				30	$ 30	
Personal Consumption Expenditures		$1,000	1,000			
Government Purchases		200			200	
Capital Goods		300				
Totals	$1,300	$1,500	$1,130	$1,240	$230	$220
Amount out of Balance	$200		$110		$-10	

Saka reasoned correctly that since Tiva exported exactly the same amount of goods that she imported and since Tivans had no other transactions with outsiders, he could eliminate the foreign sector as a source of his problem.

As he looked at the totals for the remaining sectors, it was evident that his accounts were not balanced. Producers had received $1,500 and only used $1,300, leaving a difference of $200. Consumers had received $1,240 and only used $1,130, leaving a difference of $110. And the government had used $230 and only received $220, leaving a deficit of $10. Furthermore, businesses had produced $300 worth of capital goods (producer goods)

for themselves. This had to be an inflow to the business sector because it represented goods that were produced and paid for. But who paid out the $300?

Saka added some new kinds of flows to his previous list and also a new account which he called Savings and Investment. Table XIV shows these additions and is partially filled in. Can you complete the table? We have entered the figures for business saving. The savings of each sector flow out of the sector and into the savings and investment account.

Table XIV: National Product System, Year 1963

Flows for:	Business Out	Business In	Consumer Out	Consumer In	Government Out	Government In	Savings & Investment Out	Savings & Investment In
Payments to Factors of Production:								
Wages	$ 850			$ 850				
Rent	80			80				
Interest	150			150				
Dividends	130			130				
Business Saving:								
Depreciation	(150)							$(150)
Retained Profits	(50)							(50)
Business Taxes	90					$ 90		
Personal Taxes			$ 130			130		
Government Transfers				30	$ 30			
Personal Consumption Expenditures		$1,000	1,000					
Government Purchases		200			200			
Domestic Investment:								
Capital Goods		300					$300	
Government Saving					( )			( )
Personal Saving			( )					( )
Totals	$	$	$	$	$	$	$	$

Unit 11: Determining the Nation's Income

I. First Situation: Relating the Two-fold and Four-fold Divisions

A. In the previous units the two-fold and the four-fold divisions of the economy have been discussed at length. For a fuller understanding of economics it is necessary to grasp the relationship between the two types of divisions. Make a list of the kinds of purchases made by each of the sectors. Label the items P for producer goods and C for consumer goods. What can be said about the kind of goods purchased by each sector? A grid can be constructed which illustrates the relationship between the four-fold and two-fold divisions. The left side of the grid is marked off in the producer and consumer goods to represent the two-fold division. The four sectors appear in the top of the grid.

Grid for Relating the Two-fold and Four-fold Divisions

Two-fold Division \ Four-fold Division	Consumer Sector	Business Sector	Government Sector	Foreign Sector
Types of Purchases Made by the Sectors: Consumer Goods & Services				
Types of Purchases Made by the Sectors: Producer Goods & Services				

II. Second Situation: Disequilibrium, an Imbalance between Savings and Investment

A. In previous situations we have assumed that the amount of money saved by all the sectors was exactly equal to the amount of money invested. Savings are always equal to investment in an accounting structure like the one developed for Tiva in Unit 10. The social accountant uses the assumption that savings = investment to make his accounts balance at the end of the year. The accounts give a picture of economic activities from January 1 to December 31 of a given year but the effects of these economic activities are not confined to the artificial boundary of a calendar year. In short, by making savings = investment, the social accountant gives us a balanced picture of economic activities for a given year. The economist refers to this balanced picture as a state of equilibrium.

The story below is a short description of the imaginary economy of Nowhere. This story describes an economy that remains in a perfect state of equilibrium.

The Economy of Nowhere

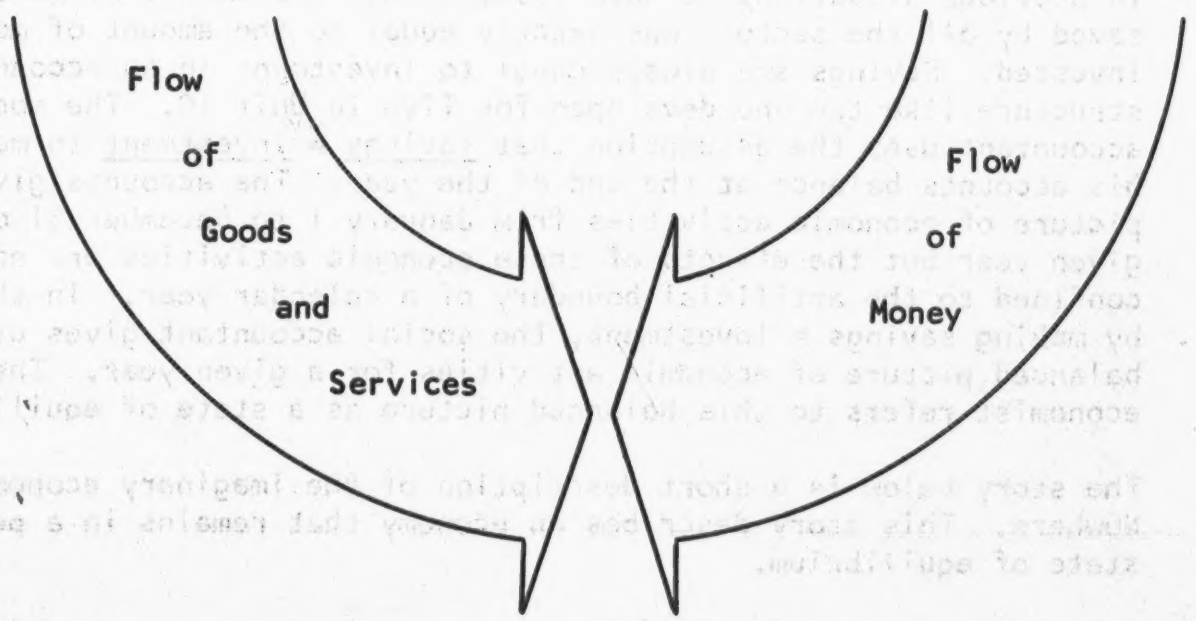
Nowhere is a very unusual country. On January 1 of each year the citizens of Nowhere are told the exact amount of their income for the year. They then make out a list of all the goods and services they intend to buy during the coming year. This information is fed into a complex of computers called "the Regiment." Within a day, all the managers of the various businesses that produce these goods and services receive a data sheet telling them how much of their product will be purchased during the year. This data sheet is entitled, "Consumer Demand." The government's Bureau of the Budget prepares a statement of its intended purchases. This purchase order known as "Government Demand" is also sent on January 2 to the business managers.

Since there is no competition for customers in Nowhere, the businessmen divide the consumer demand proportionally among themselves. The businessmen then decide the amount of money they will need for investments in producer goods. This information is fed into a giant computer called "The Investotron", which summarizes the total investment needs of Nowhere. This total is called "Producer Demand".

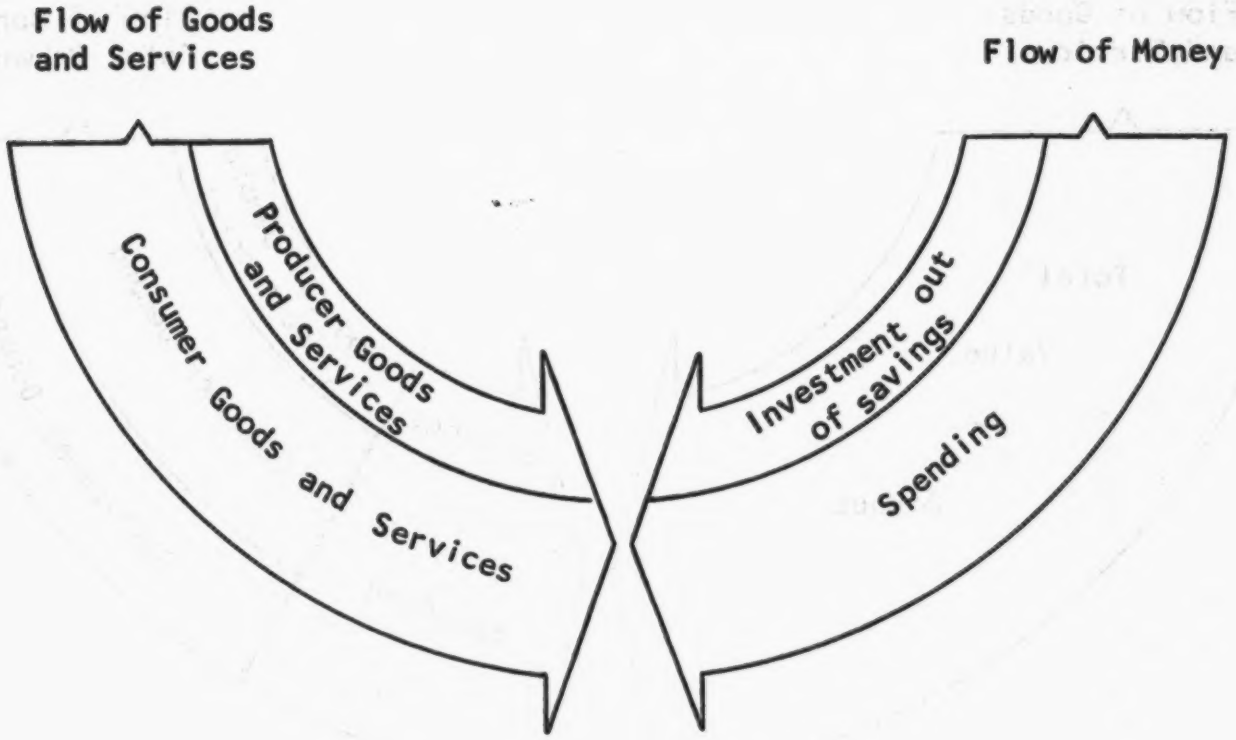
Consumer demand plus government demand plus producer demand gives the economists a figure which they call "Total Demand". In Nowhere, the total value of the output always is exactly equal to the total demand, the government always spends exactly what it receives in taxes, and the amount of total savings is always exactly equal to the amount of total investment.

Nowhere is in a state of equilibrium. Year in and year out this state of equilibrium is preserved. Nowhere trades with nobody because trade might upset the balance, causing disequilibrium. The national anthem of Nowhere is "Don't Make Waves" and the motto is "Don't Rock the Boat."

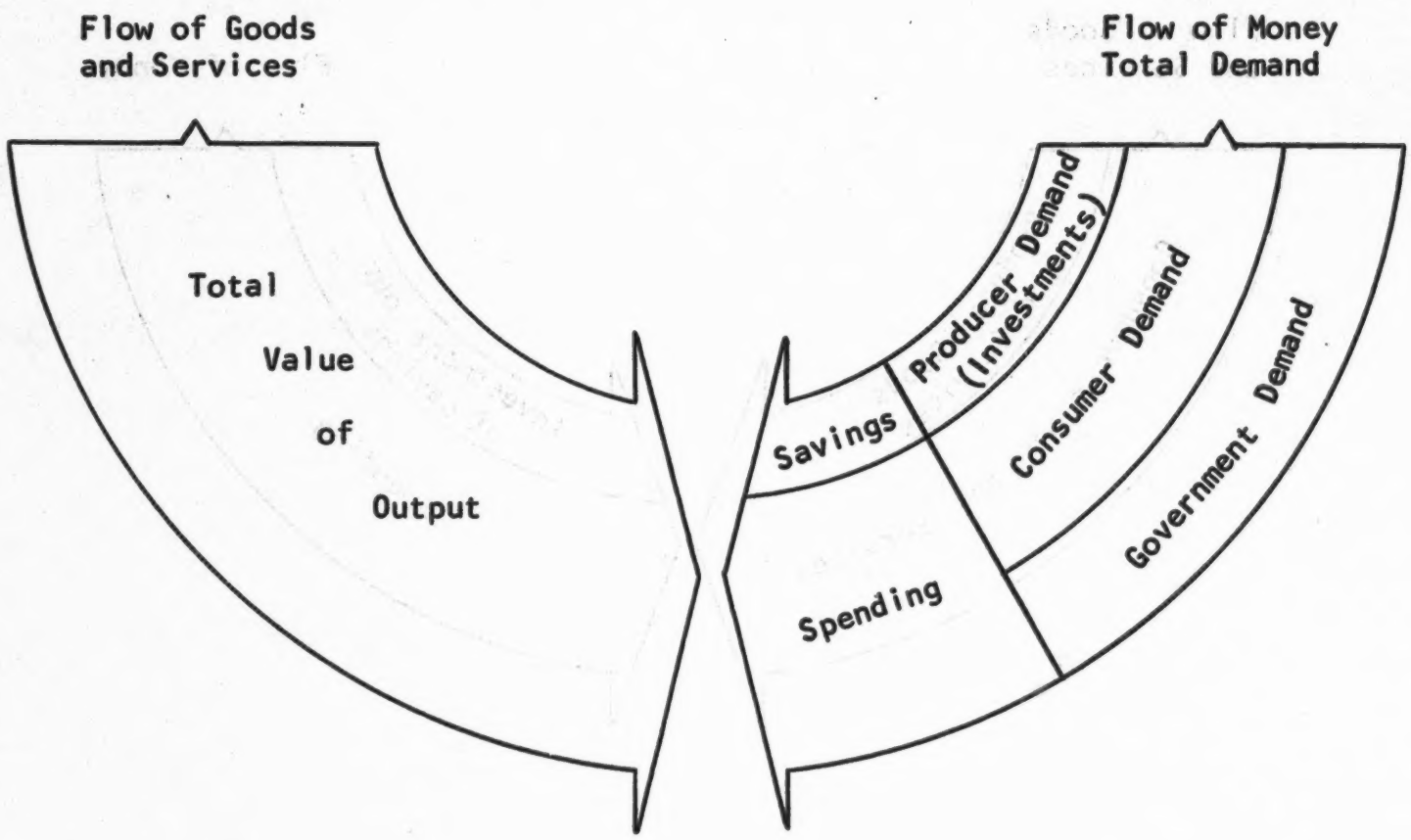
B. The simple definition of equilibrium as a balance between the flow of goods and services and the flow of money has been illustrated in previous units with the following drawing:



In Unit 10, the flow of money arrow was illustrated in such a way that it showed a division into spending and saving. By assuming that the whole amount of money saved by the society was invested in producer goods, the drawing showed equilibrium in the following manner:



In this learning situation, we will create a more detailed picture of the flow of money. The spending and saving of the society will not be related to the demands of the three domestic sectors for goods and services. The expanded definition of equilibrium is pictured as follows:



Let us suppose that last year the economy of the U. S. showed a state of equilibrium. By this we mean that:

1. Producers correctly anticipated the demands of consumers and government.

2. Producers also correctly anticipated the amount of producer goods and services needed.

3. The total savings of the society were used to finance the investments in producer goods and services.

We will further suppose that the amounts of money involved were:

1. Total value of output - $500 Billion

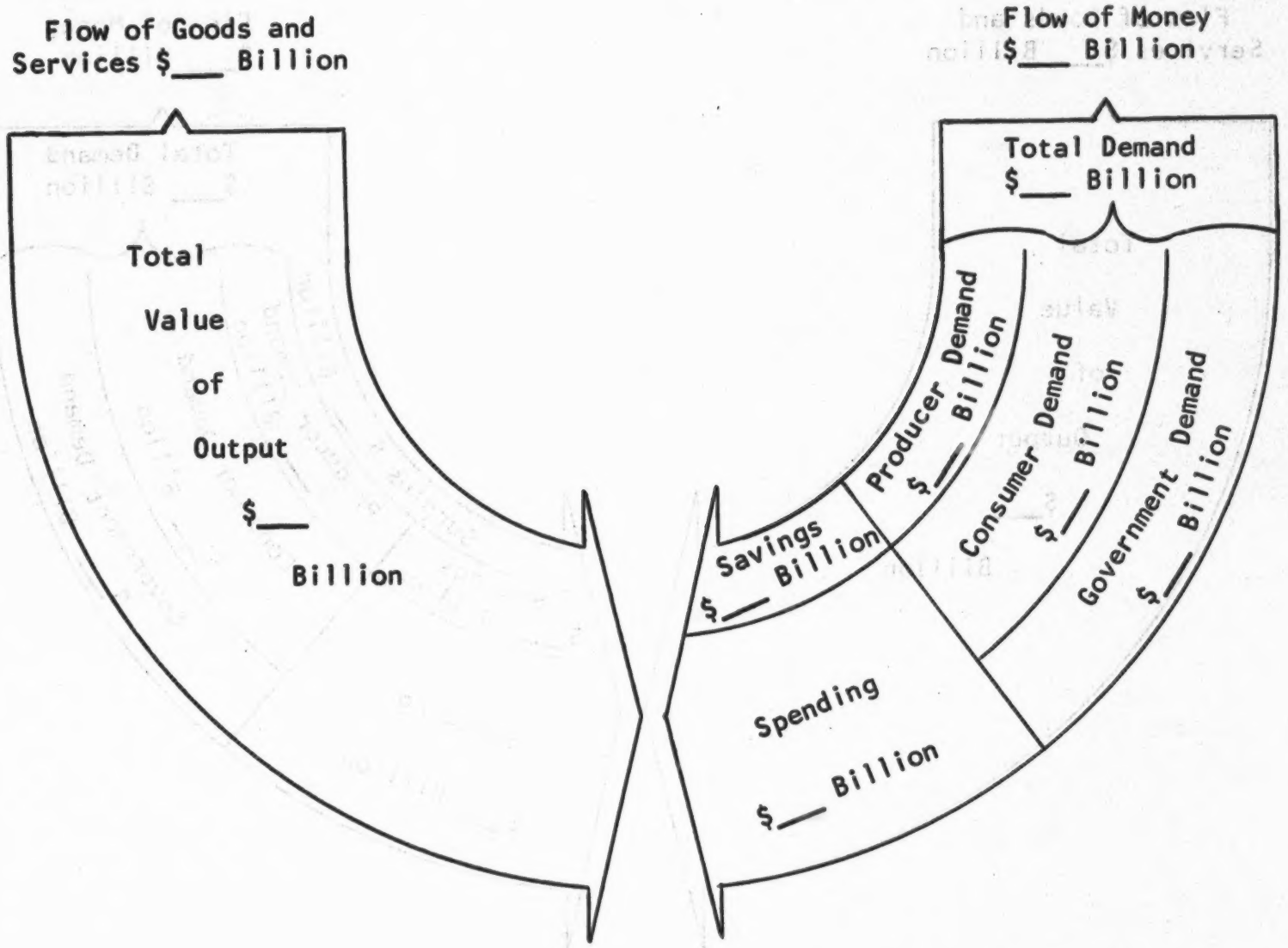
2. Consumer demand - - - - $350 Billion

3. Producer demand - - - - $ 50 Billion

4. Government demand - - - $100 Billion

Insert the figures above in the arrows in Diagram II.

Diagram II


Flow of Goods and Services $___ Billion
Flow of Money $___ Billion
Total Value of Output $___ Billion
Total Demand $___ Billion
Producer Demand $___ Billion
Consumer Demand $___ Billion
Government Demand $___ Billion
Savings $___ Billion
Spending $___ Billion

Total Value of Output $___ Billion = Total Demand $___ Billion

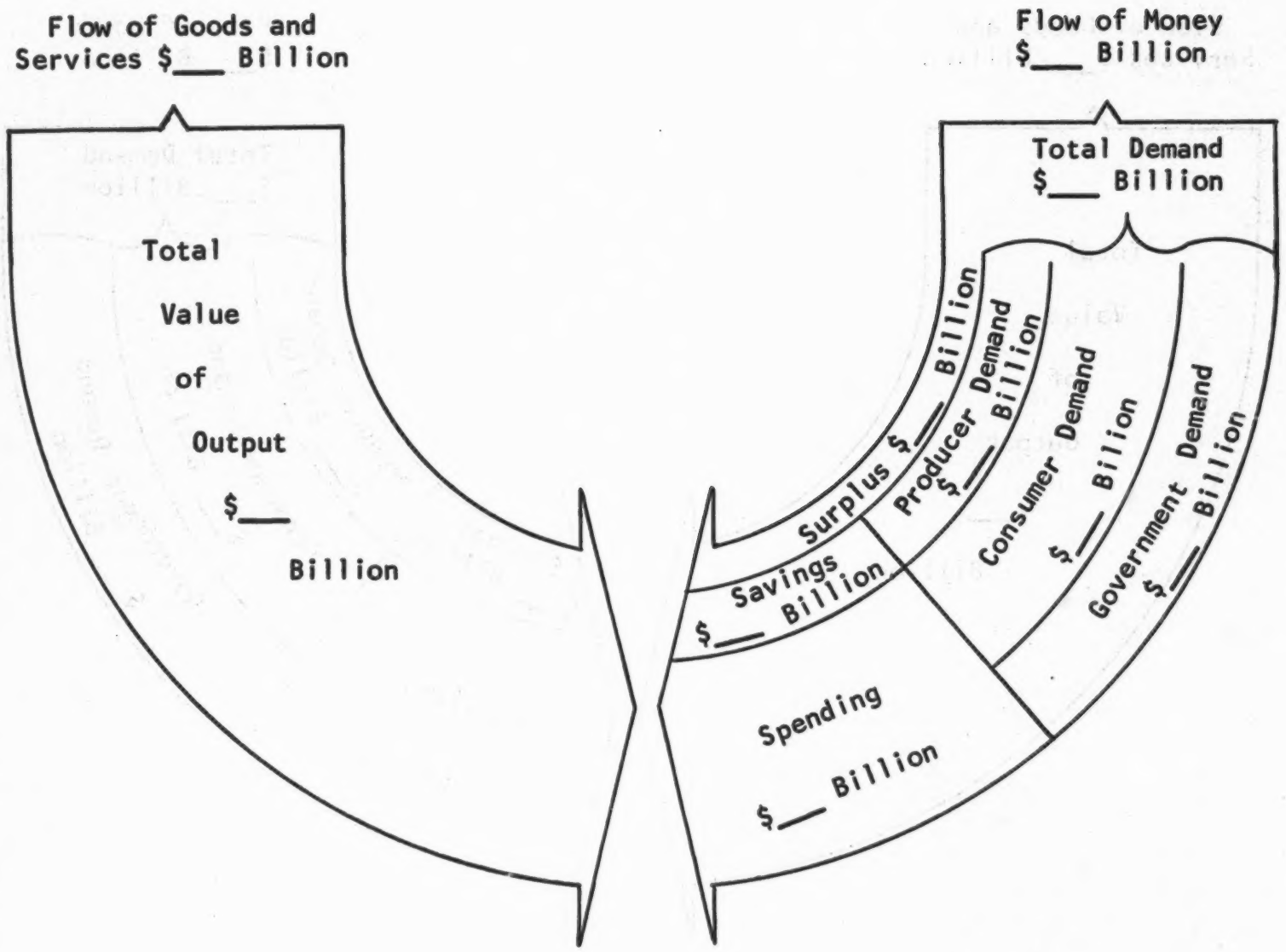
Notice that this expanded definition of equilibrium still implies that savings are equal to investment. (Producer demand).

How will we show a picture of disequilibrium in the U. S. economy? Suppose the amounts of money involved in the flows were as follows:

1. Total value of output - $500 Billion
2. Consumer demand - - - - $325 Billion
3. Producer demand - - - - $ 50 Billion
4. Government demand - - - $100 Billion

Using these figures, complete Diagram III.

Diagram III


Flow of Goods and Services $___ Billion
Flow of Money $___ Billion
Total Value of Output $___ Billion
Total Demand $___ Billion
Surplus $___ Billion
Producer Demand $___ Billion
Consumer Demand $___ Billion
Government Demand $___ Billion
Savings $___ Billion
Spending $___ Billion

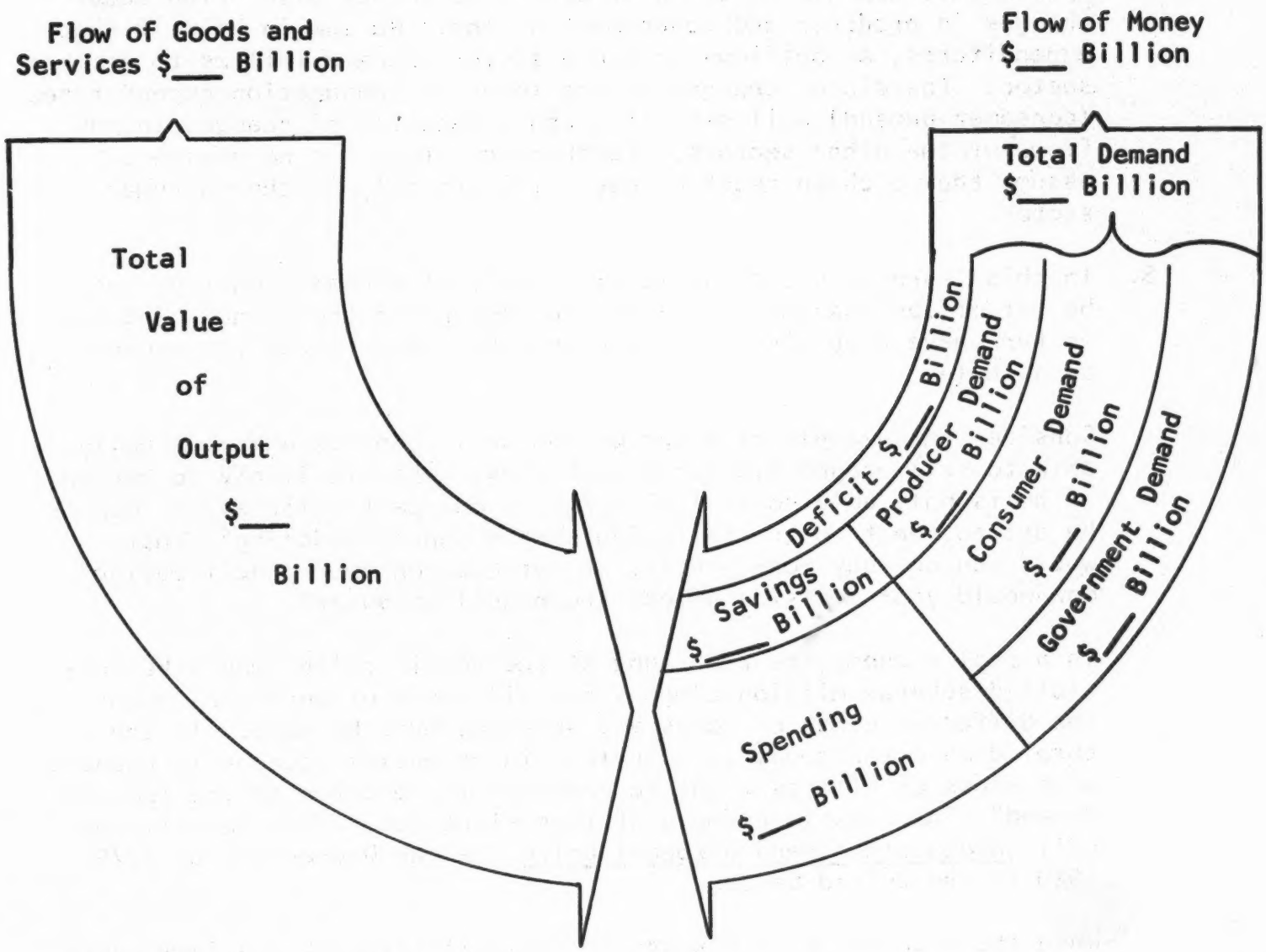
Total Value of Output $___ Billion ≠ Total Demand $___ Billion

Another type of disequilibrium that might also occur when the amount of money in the flows is as follows:

1. Total value of output - $500 Billion
2. Consumer demand - - - - $375 Billion
3. Producer demand - - - - $ 50 Billion
4. Government demand - - - $100 Billion

Complete Diagram IV using these data.

Diagram IV


Flow of Goods and Services $___ Billion
Flow of Money $___ Billion
Total Value of Output $___ Billion
Total Demand $___ Billion
Deficit $___ Billion
Producer Demand $___ Billion
Consumer Demand $___ Billion
Government Demand $___ Billion
Savings $___ Billion
Spending $___ Billion

Total Value of Output $___ Billion ≠ Total Demand $___ Billion

We have seen that disequilibrium may occur in two forms where:

1. Total value of output is greater than total demand.

2. Total value of output is less than total demand.

Only the consumer demand has changed in the examples used above, but changes may occur in any of the sectors to cause the balance to be thrown off. We will see later how the level of expenditures of any sector has an effect upon the equilibrium.

III. Third Situation: Disequilibrium and the Multiplier

A. Disequilibrium occurs in two forms. The last situation showed that the total value of output could be more or less than the total demand. You will recall that in Diagrams III and IV of the second situation only consumer demand varied while producer demand, government demand, and total value of output remained constant. We said

earlier that this condition was unrealistic. It is unrealistic to assume that changes in consumer demand would not also bring about changes in producer and government demand. We saw in Unit 10 that expenditures, as outflows from one sector, became inflows to another sector. Therefore, changes in the level of consumption expenditures (consumer demand) will set off a chain reaction of changes in the flows of the other sectors. Furthermore, there is no reason to assume that a chain reaction may originate only in the consumer sector.

B. In this learning situation we will see that a chain reaction may be set off by changes in any of the sectors in the economy and may in turn have a multiple effect upon other sectors and the economy as a whole.

Consider the example of a person who sells pencils and is usually able to sell around $10 worth each week. What is likely to happen if he is only able to sell $5 worth in one particular week? How is he apt to react to the following week's pencil peddling? What would you do--buy more pencils or cut back on your pencil buying? How would your decision affect the pencil producer?

In a real economy the reactions of the pencil seller would be multiplied several million times since all sorts of decisions about the different kinds of goods and services must be made. If the total demand for goods and services in an entire economy is reduced, what kinds of effects might be expected in reaction to the lowered demand? The classic example of this situation, which we will now call <u>inadequate demand disequilibrium</u>, is the Depression of 1929-1939 in the United States.

When the economy is in a state of disequilibrium of the form where total value of output is less than the total demand for goods and services (<u>inadequate supply disequilibrium</u>), we may observe another chain reaction. The final result of this chain reaction will depend upon the level of employment of the factors of production. If the economy is operating at full capacity, that is all the factors of production are being utilized, then the demand for production of more goods and services cannot be met. On the other hand, when there is some available unused capacity to produce, disequilibrium of inadequate supply can bring about an increase in the total output of goods and services. What sort of effects will result from these situations?

C. Up to this point the discussions have been concerned with only the results of the various types of disequilibrium but not with the <u>amount</u> of growth, depression or inflation. The amount of growth, depression or inflation experienced by the economy will be determined by the magnitude of the chain reaction. When all the reactions are considered, a multiple effect can be seen as the result of an initial change in the magnitude of expenditures by one or more sectors. This effect is known as the multiplier.

The Multiplier in Action

The Student Council of Central High School was holding its biweekly meeting when the representative of the Student Athletic Council announced that his club had received $100 as their share of the proceeds from ticket sales at athletic events. The Athletic Council had decided they needed a new ticket booth and were willing to pay the Industrial Arts Club $80 to build it for them. This was an offer the Industrial Arts Club could not reject. The Industrial Arts Club had just given an exhibition of their projects and had asked the Photography Club to shoot pictures of it. For all the photographic work, the printing and framing of the pictures, the Industrial Arts Club paid the Photography Club $51.20. The photographers had to have the frames for the pictures made by the Art Club, and they paid $41 for these frames. The Art Club in turn paid the School Newspaper $32.80 to have several pages of their artwork published in the paper. The remaining money was received and spent among the various clubs in the school. Each of these transactions became successively smaller and smaller in amount. For example, one of the last few transactions was the Cheerleaders' purchase of ten cents worth of confetti from the school store.

The table below follows the flow of income generated by the original $100.

Period	Income to Clubs	Consumption Expenditures	Savings by Clubs
0	0	0	0
1. Student Athletic Council	$100.00	$ 80.00	$ 20.00
to			
2. Industrial Arts Club	80.00	64.00	16.00
to			
3. Photography Club	64.00	51.20	12.80
to			
4. Art Club	51.20	41.00	10.20
to			
5. School Newspaper	41.00	32.80	8.20
6	32.80	26.20	6.60
7	26.20	21.00	5.20
8	21.00	16.80	4.20
9	16.80	13.40	3.40
10	13.40	10.70	2.70
11	10.70	8.60	2.10
12	8.60	6.90	1.70
13	6.90	5.50	1.40
14	5.50	4.40	1.10
15	4.40	3.50	.90
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.
All other Periods	17.50	14.00	3.50
Totals	$500.00	$400.00	$100.00

Question: How much money from outside the Student Council came into the funds of this group?

Answer: $100--The original income from the sale of tickets at athletic events.

Question: How much money was saved through the whole series of transactions among the clubs at Central High?

Answer: $100--In the first transaction the Athletic Council saved $20 of their income of $100, in the second transaction the Industrial Arts Club saved $16, in the third transaction the Photography Club saved $13.80, the Art Club saved $10.20 and the Newspaper saved $8.20 and so on till all transactions were completed. The total savings was $100.

Question: From the original $100 earned by the Athletic Council, how much income was created for all the clubs of the school?

Answer: $500--The Athletic Council earned $100 selling tickets, the Industrial Arts Club, $80 for building a new ticket booth, the Photography Club $64 for their work, the Art Club received $51.20 from the Photography Club, the Newspaper earned $41 for services to the Art Club, and so on till the total reached $500.

As was shown in the table above and the questions and answers which followed the table, the change of expenditure of $100 created by the income from ticket sales resulted in a total increase in income of all the groups in the school of $500. This example shows the multiple effect of a change in the level of expenditures. This effect, called the multiplier, is determined by (1) the size of the original change in expenditures and (2) the tendencies of consumers to spend and save. The amount of income which is used to buy goods and services is known as the marginal propensity to consume or MPC, and the amount saved is referred to as the marginal propensity to save or MPS. The MPS is determined by subtracting MPC from the total disposable income. MPS is sometimes referred to as the leakage from total income. These terms are used in determining the multiplier. The formula for the multiplier is:

$$\text{multiplier} = \frac{1}{1-\text{MPC}}$$

For example:

1. In the case of Central High School, 80% of income was spent (MPC) in each of the transactions leaving 20% leakage (MPS). When leakage is 1/5 (20%) expressed as a fraction, then the multiplier = $\frac{1}{1-4/5} = \frac{1}{1/5} = 5$.

2. If the MPC = 75% and MPS = 25% or 1/4, then the multiplier will = $\frac{1}{1-3/4} = \frac{1}{1/4} = 4$.

3. Determine the size of the multiplier when:

   a. MPC = 66 2/3%

   b. MPS = 50%

Unit 12: Role of Money and Financial Institutions

I. First Situation: The Functions of Money

A. In previous units we have used the term "money" quite frequently and freely without any specific definition of money. It has been said "that money is what money does." How would you define money? The following short story illustrates the basic functions of money and the requirements a thing must possess in order to be used as money.

Welsh's Warehouse

"Achtung! Achtung," the loud-speaker blared across the compound of Stalag X. What followed was a dismal repetition of orders, details and regulations which, the commandant continually reminded the American Prisoners of War, were necessary for the operation of a "successful Prisoner of War camp."

Standing in the cold December breeze the prisoners were not particularly impressed with Herr Gratz' appeal for a good camp. As Dave Welsh from New Jersey commented "Who the heck wants to be a successful Prisoner of War?" On this particular morning however, the commandant personally made the announcements and then added that a special treat was in store for the men - International Red Cross representatives would distribute Red Cross Christmas boxes to all prisoners later that afternoon.

In spite of the barbed-wire and German guards there was an almost festive mood as the prisoners lined up to receive their packages. While not entirely starved at the camp, they missed the variety of "state-side" cooking and eagerly awaited the canned fruit, candy, gum and even the hard cookies which were usually included in the Red Cross gifts. Another item which was important even to non-smokers was the tobacco and cigarette allowance.

That evening the barracks were the scene of pre-Christmas celebrations as the prisoners traded those items they didn't want for those they wanted. Razor blades were swapped for candy, gum and soap by some of the prisoners who were young enough to get by without shaving. Although Dave Welsh was opposed to being a successful prisoner, he saw no harm in being a successful trader and it was his footlocker which became the center of activity in the weeks following a package distribution. With a craving for candy and "soap that lathers" he had used his razor blades and cigarette ration to satisfy his needs and also build up enough extra to satisfy the needs of others - that is if they were willing to trade with him. Even the German guards were known to make use of Dave's supply of extras, bringing him fresh fruit or eggs in exchange for the much coveted American tobacco or candy.

At first, the trading around Dave's footlocker was quite informal and there was no particular rule which made so many cigarettes worth so much soap. However, after a disagreeable dispute over the fact that Dave had charged one man five cigarettes for one candy bar while charging another three for the same kind of bar, he set up a rate of exchange in which all items traded

were given a cigarette value. On the next trade day the prisoners watched Dave pin his exchange rate above his locker. It read:

> NOTICE TO ALL GIs
>
> From November 1, 1944 the following exchange rates will be official at "Welsh's Warehouse":
>
> 1 bar soap = 2 cigarettes
> 1 candy bar = 4 cigarettes
> 1 razor blade = 6 cigarettes
> 1 can fruit = 8 cigarettes
> 1 can cookies = 20 cigarettes

Soon Dave's exchange list was accepted by the whole camp and much of the friction over unfair exchanges or favoritism disappeared.

Dave wasn't particularly known for his generosity but sometimes he was persuaded to loan cigarettes to men who had used up their own ration, and on the occasion of the American group leader's silver wedding anniversary he donated some cigarettes so that the German cooks could be bribed into baking a cake. In spite of all the difficulties of camp life "Welsh's Warehouse" helped make it a little more tolerable.

In the spring of 1945, however, all this changed. With Allied bombing missions taking a steady toll of German bridges and railroads the German authorities began to use Prisoners of War as repair crews. Dave Welsh was assigned to one such crew and was gone from the camp for almost a week. And what a week it was--heavy spring rains made road and bridge work extremely difficult and when Dave returned to the camp, flooding had swamped the barrack's floor and left the contents of Dave's locker a soggy mess. Razor blades were rusted, candy bars molded and the cigarettes fell apart as Dave lifted them from the locker.

A week ago Dave had been the center of camp life and the men used his judgment as the measure of what items should cost. Now he could hardly give away what last week had been the most valuable items in the camp. One heavy spring rain had changed him from a successful trader to just another successful prisoner of war.

B. Some primitive societies use shells, fishing hooks, and stones as money. Even in industrially advanced societies several things may function as money. The following dialogue shows how checks serve as a form of money in the United States.

Checks as Money

Setting: Hal has just started his new job as a paperboy and wants to open a bank account in which he could deposit his newly earned money. He is now at the bank talking to the banker, Mr. Glick.

Mr. Glick: May I help you?

Hal: Yes, I am earning my own money now, and I would like to open a bank account.

Mr. Glick: Do you want to start a savings account or a checking account?

Hal: I don't know. What is the difference between the two?

Mr. Glick: With a checking account you bring your money into the bank and give it to one of our tellers who will make an entry on your account telling how much you deposited. Then you can write checks to other people on the account which you have acquired. When a check is cashed, the amount is subtracted from your account.

Hal: That makes it sound really simple. Everything is right there on paper to see. What is the difference between this and a savings account?

Mr. Glick: With a savings account you can not write checks. The only way you can use the money is to come in and ask for a withdrawal. With a checking account you do not really need cash because you can write a check which serves the same purpose.

Hal: Checks are really another kind of money, aren't they? Which would be the best kind of account for me? I am going to have to pay the newspaper company for my papers every week, and I still owe $20 on my bike. Also, my Dad thinks I ought to learn to keep track of my money. He says I don't know what I spend it on.

Mr. Glick: Well, in that case I think a checking account would be best for you. Then you could just write a check to the newspaper and the bicycle shop.

Hal: Yes, I think you're right. Do a lot of people have checking accounts?

Mr. Glick: Yes they do. Today people in the United States have about $38 billion in the form of coin and currency, but they have over $125 billion in checkbook money. In fact, it is estimated that Americans use checks for about 76 per cent of the money value of all goods and services.

Hal: Wow! I can't even imagine that much money. I have another question. If people pay me with a check, do I have to change it into cash before I can deposit it in my account?

Mr. Glick: No. You can deposit it as you would coins or currency. The bank will then credit this amount to your account and subtract it from the account of the person who wrote the check.

Hal: You mean no money is really exchanged?

Mr. Glick: Right! It's simply a matter of subtracting from one account and adding to another.

Hal: But what if a person who has a checking account in another bank gives me a check? Do you just go to the other bank and get the money from them, or do I have to cash this check before I make a deposit?

Mr. Glick: No. You can still deposit the check in your account. This is because most banks have accounts in the Federal Reserve Bank. The amount of the check you deposit with us will be added on to our account and subtracted from the account of the other bank. This is all done very quickly. In fact, it only takes a few days for banks on different sides of the country to balance their accounts, although it used to take weeks.

Hal: Thank you, Mr. Glick. I never realized what was involved in a checking account. Now I would like to open one so that I can use it for myself.

II. Second Situation: Financial Institutions

A. Because we all use money (different forms of currency) every day, we have the tendency to forget that money is a symbol and has value only when people agree to its worth. This idea was implied in Unit 11 when we discussed the changing buying power of money due to inflation and deflation. In other cultures and at other times people have used many different kinds of things in the way paper money and coins are used today. Cattle, circular stones, slaves, beads, nails, and cigarettes have all served as media of exchange. All these various types of money have one thing in common. That is that sizable groups of persons have enough confidence in these items to use them as a basis for exchanging other goods and services. Agreement about what is to be used as money is essential. If there is no agreement, then the economy is a trade or barter economy.

Since many different articles may be used as money, what is used as money may be changed from time to time. These changes occur when many people lose confidence in the old form of money or when many people begin to value some other article more than the old form of money.

B. The main idea expressed above was that money is a social invention. Items such as cigarettes, beads, gold, and dollar bills continue to be used as money so long as a group of persons place confidence in the items. Over a long period of time it is important that a society be flexible as to what it regards as money, but too much flexibility over a short period of time, say twenty years, does not lead to a feeling of confidence. To protect itself from too rapid a change in its monetary units, society invents institutions to regulate its

money. Various kinds of financial institutions, both public and private, have been developed to regulate money. In this learning situation we will discuss the development and operation of private financial institutions. Public financial institutions and their relationship with private financial institutions will be studied in Unit 13. The following demonstration involves you in a situation which shows the need for a financial institution to act as a clearinghouse for persons who wish to borrow money and for persons who wish to lend money. It illustrates one reason why a society is led to the invention of a bank. Later, we will investigate other services which banks perform and how different kinds of banks specialize in various services.

Preparation: Before the demonstration begins, certain definitions and rules must be given.

Definitions:

1. Net worth--Mr. Miller owns an automobile valued at $2,000, a house worth $18,000, furniture and appliances valued at $3,000, and $2,000 in savings. He owes $6,000 to the bank and $4,000 to his father. We can list the value of all the things he owns in one column called assets and all the debts he owes in another column called liabilities.

Assets	Liabilities
$ 2,000	$ 6,000
18,000	4,000
3,000	
2,000	
$25,000	$10,000

By subtracting his liabilities ($10,000) from his assets ($25,000) we obtain his net worth which is $15,000. Net worth is a person's assets minus his liabilities.

2. Financial intentions--In this demonstration the term financial intention means the desire of a person to borrow money or lend money or both borrow and lend money.

3. Level of risk--In this demonstration the financial intentions of certain persons are described as a willingness to lend money to other persons at various levels of risk. What are the chances that the loaned money will not be repaid? This is the simple notion of risk used in this demonstration. The levels of risk are numbered in a scale from one to six with the following meanings attached to each number:

6. extreme risk	3. average risk
5. high degree of risk	2. low degree of risk
4. moderate risk	1. very little risk

The higher the number is, the greater the risk.

Demonstration: Every student in the class will be assigned a role to play in the demonstration. The list below contains descriptions of the net worth and financial intentions of an imaginary group of persons. The teacher will assign a letter (A, B, C....Z) or a Roman numeral (I, II, III....X) to each student. At the teacher's signal each student will move about the room trying to find some other person whose financial intentions fit with his own. For example, person R who wishes to borrow $1,000 locates person X who is willing to make a loan at the risk 4 level. Person X then locates someone else to loan the remainder of his money. After three minutes, the teacher will determine how many students were able to satisfy the financial intentions of their assigned role. Each student whose role calls for a willingness to lend money at a certain level of risk will have to judge the level of risk of the person seeking a loan. This judgment is based on the net worth of the person seeking the loan and on the amount of money he desires to borrow.

Rule 1: Every student seeking a loan must properly identify himself by letter or Roman numeral so that the student who has money to lend can check his net worth on the Demonstration List.

Rule 2: Each student will carry a piece of paper and a pencil with which he will record all transactions. For example:

Student's Name--Stephen Lentz
Assigned Role--H

Transactions:

1. Borrowed $1,000 from Jerry Wells (M)
2. Borrowed $1,000 from Susan Zilch (I)
3. Loaned $5,000 to Peter Kranch (P)

Prepare your papers as described above and wait for your teacher's signal to start.

Note: Certain classroom situations may preclude the use of the active demonstration described here. In this case, a discussion of the difficulties involved in getting persons with different financial intentions together without a bank may develop from an inspection of the Demonstration List.

Demonstration List

Person	Net Worth	Financial Intentions
A	$ 10,000	Willing to lend $1,000 at the risk 2 level.
B	25,000	Willing to lend $3,000 at the risk 2 level and willing to lend $2,000 at the risk 4 level.
C	20,000	Seeking a loan of $3,000 and willing to lend $1,000 at the risk 1 level.
D	15,000	Seeking a loan of $5,000.
E	50,000	Willing to lend $10,000 at the risk 2 level and $5,000 at the risk 4 level and $2,000 at the risk 6 level.
F	50,000	Seeking a loan of $20,000.
G	100,000	Willing to lend $30,000 at the risk 3 level, $10,000 at the risk 5 level, and $2,000 at the risk 6 level.
H	30,000	Seeking a loan of $5,000 and willing to lend $2,000 at the risk 1 level.
I	10,000	Willing to lend $1,000 at the risk 2 level and $1,000 at the risk 1 level.
J	20,000	Willing to lend $3,000 at the risk 2 level and $1,000 at the risk 5 level.
K	5,000	Seeking a loan of $1,000.
L	5,000	Seeking a loan of $10,000.
M	5,000	Willing to lend $1,000 at the risk 1 level.
N	3,000	Seeking a loan of $3,000.
O	10,000	Seeking a loan of $20,000.
P	10,000	Seeking a loan of $10,000.
Q	2,000	Seeking a loan of $5,000.
R	1,000	Seeking a loan of $1,000.
S	2,000	Seeking a loan of $1,000.

Demonstration List (Continued)

Person	Net Worth	Financial Intentions
T	$ 5,000	Seeking a loan of $5,000.
U	1,000	Seeking a loan of $5,000.
V	1,000	Seeking a loan of $1,000.
W	20,000	Seeking a loan of $50,000.
X	100,000	Willing to lend $30,000 at the risk 2 level and $10,000 at the risk 4 level.
Y	200,000	Willing to lend $30,000 at the risk 3 level.
Z	500,000	Willing to lend $100,000 at the risk 2 level, $50,000 at the risk 4 level and $10,000 at the risk 5 level.
I	45,000	Seeking a loan of $20,000.
II	20,000	Seeking a loan of $30,000.
III	20,000	Willing to lend $5,000 at the risk 1 level.
IV	75,000	Seeking a loan of $100,000.
V	200,000	Seeking a loan of $300,000.
VI	30,000	Seeking a loan of $10,000 and willing to lend $3,000 at the risk 2 level.
VII	20,000	Seeking a loan of $40,000.
VIII	10,000	Willing to lend $2,000 at the risk 1 level and $1,000 at the risk 2 level.
IX	25,000	Willing to lend $5,000 at the risk 3 level and $1,000 at the risk 6 level.
X	5,000	Seeking a loan of $1,000.

III. Third Situation: A Flexible Money Supply

This learning situation will be a demonstration in which you will participate. The directions will be given by the teacher.

Unit 13: Monetary and Fiscal Policies

I. First Situation: A Flexible Money Supply

A. In the last unit we discussed the <u>need</u> for a flexible money supply. Then, we discovered that we <u>have</u> a flexible money supply, but how do we increase or decrease the amount of money? If we need an additional supply of money it must be created. In a series of scenes--each scene representing a different bank--we will see how the commercial bank creates money in the process of its daily business.

B. The following play is suggested as an introduction to the process of creating flexibility in the money supply. The teacher may use his desk to represent a commercial bank. He is the moderator. He makes the changes from Scene I--the first bank--to Scene II--the second bank--and so on. He will select six actors for the cast of Scene I, 3 actors for Scene II, and 3 actors for Scene III.

Changing the Supply of Money

SCENE I

CAST:

Mr. Monetary - the banker for the Federal Reserve Bank (known as the "Fed") who keeps the records for the "Fed" on the chalkboard.

Mr. Cashbaugh - the banker for the 1st National Bank, who is seated at the desk. He has a record book, a pad of notes, and 3 checkbooks.

Mr. Speed - the depositor, who has $10,000 in currency to deposit in the 1st National Bank, and deposit slips (original and duplicate).

Mike - the Brinks messenger, who stands near the desk of the commercial banker. He has several large envelopes, one of which is marked REQUIRED RESERVES.

Mr. Champp - the borrower (representing the Champion Sporting Goods Co.) who comes to the bank to borrow $8,000 in order to increase their stock of sporting goods for the coming football season. He is seated at the front of the room on the left side.

Mr. Tanner - the supplier of leather goods who receives the order, and later, the check for $8,000 from the Sporting Goods Co. The supplier is seated at the front of the room on the right side.

Setting: 1st National Bank

(The actors take their places for the first scene.)

Teacher: May I present Mr. Monetary (banker for the Federal Reserve Bank), Mr. Cashbaugh (banker for the 1st National Bank), and Mike, the Brinks messenger.

Mr. Speed: (takes checks, currency, and deposit slips to the banker at the 1st National Bank)

Good morning, Mr. Cashbaugh. Please deposit this to my account.

Mr. Cashbaugh: Hm! $10,000. You must have closed some good deals yesterday.

(The banker stamps the deposit slips and gives the duplicate to Mr. Speed)

Thank you.

(Mr. Speed returns to his seat)

Let's see, (he is filling out a form for the "Fed" and counting the checks and currency which he puts in an envelope marked "required reserves") 20% of $10,000 is $2,000. Mike! Deposit this $2,000 to the account of the 1st National Bank at the "Fed". It is for required reserves.

Mike: (putting the money and deposit slip in the large envelope marked REQUIRED RESERVES)

By the way, (pointing to the words on the envelope) what is "required" about this?

Mr. Cashbaugh: You see, Mike, there is a regulation that requires us to deposit 20% of all our demand deposits in the "Fed". You saw Mr. Speed deposit $10,000 to his account. I must deposit $2,000 in the "Fed"; it is the required reserve.

Mike: Yeh? Why?

Mr. Cashbaugh: For a couple of reasons--first, we know that it assures us that we can pay our depositors when they want to withdraw money. You know that all of them do not draw out all of their money at the same time, in other words, we have both deposits and withdrawals every day; but the most important reason is that it controls the flexibility of the money supply.

Mike: Just what does <u>that</u> mean? I've heard of "wooden nickels" and "rubber checks" but how can an honest banker change the money supply?

Mr. Cashbaugh: In this way: I'm sending that $2,000 to the "Fed" and keeping $8,000 out of the $10,000 which Mr. Speed deposited to his account--but, excuse me a minute.

(Mr. Cahmpp of the Champion Sporting Goods Co. is approaching the desk.)

Good morning.

Mr. Champp: Good morning, Mr. Cashbaugh. I am Mr. Champp of the Champion Sporting Goods Co. These schools are "swamping me" with orders to be filled by September. My stock isn't large enough, and I surely don't want to lose the business. I need money for additional stock to be sure of filling all of the orders I expect to get.

Mr. Cashbaugh: Could you stagger your orders and collections in order to manage with $8,000?

Mr. Champp: Well, I'll do the best I can.

Mr. Cashbaugh: (He writes out a note for $8,000.)
Please sign this note, here.

(Mr. Champp signs the note.)
Thenk you, and here is your checkbook.

(Mr. Cashbaugh records the demand deposit--a credit to the account of the Champion Sporting Goods Co.
Mr. Champp leaves the bank and goes to the desk of the supplier, Mr. Tanner.)

(Speaking to Mike) Now, why could I lend only $8,000 to Mr. Champp?

Mike: I suppose it was because I had the other $2,000--the reserve requirement that must be deposited in the "Fed".

Mr. Cashbaugh: Right!

Mike: But Mr. Champp didn't get his <u>money</u>!--his $8,000.

Mr. Cashbaugh: Not in currency, no, but in the form of a demand deposit. He won't pay for the goods until the order is filled, but he has to know that he <u>can</u> pay for it when the goods are delivered. This is the way we do it. (Opening the account books) We credit Mr. Champp's account for $8,000. Remember, I gave him a checkbook. When he pays for the sporting goods, he writes a check on this account. It is a kind of money, just as currency is money.

Mike: Can Mr. Speed still write checks on his account for $10,000?

Mr. Cashbaugh: Yes, Mr. Speed can write check for $10,000, and Mr. Champp can write checks for $8,000.

Mike: That is just like having $8,000 more money in the money supply than we had 5 minutes ago.

Mr. Cashbaugh: That's exactly the point! We have increased the money supply. If you are really interested, why don't you ask Mr. (teacher) to keep a record on the chalkboard. Each time money is created he will write the name of the bank and the amount of money that is created.

Mike: Mr. (teacher), the 1st National Bank has just created $8,000.

(The teacher records the amount on the chalkboard. Mr. Champp returns to his seat on the left side of the room, and Mr. Tanner completes the order form)

Mr. Cashbaugh: Now, you better get over to the "Fed". We'll discuss the flexible money supply later.

(Mike takes the envelope to Mr. Monetary who credits the "Reserve Requirements" account with $2,000 and records the name of the bank. He stays with Mr. Monetary during the remainder of the scene.)

Mr. Tanner: (Calling Mr. Champp on the phone) Your order amounts to $8,000, Mr. Champp. I understand that you would like delivery as soon as possible. The terms are payment on delivery.

Mr. Champp: Right!

Mr. Tanner: Thank you.

(Mr. Tanner delivers the goods to Mr. Champp.)

Mr. Champp: I have your check ready for you--$8,000.

Mr. Tanner: Thank you.

(Mr. Tanner returns to his seat on the right in the front of the room. He remains there for Scene II.)

END OF SCENE I

(Mr. Monetary, the banker for the Federal Reserve Bank, remains at the chalkboard. All others, except Mr. Tanner, return to their regular seats in the classroom. Mr. Tanner remains in his seat at the front of the room.)

SCENE II

CAST:

Mr. Monetary - the banker for the Federal Reserve Bank is held over from Scene I.

Mr. Tanner - the supplier in Scene I becomes the depositor in Scene II.

Mike - the Brinks messenger is held over from Scene I.

Mr. Checkman - the banker for the 2nd National Bank is seated at the desk.

Mr. Burger - the borrower (from The Hot Spot restaurant) comes to the bank to borrow $6,400 to remodel his restaurant. He is seated at the front of the room on the left side.

Mr. Nailer - the contractor, who gives the owner of the restaurant an estimate for remodeling,--receives the order and a check. He is seated at the front of the room on the right side.

Setting: 2nd National Bank

Teacher: May I present Mr. Checkman, the banker for the 2nd National Bank.

(The banker takes his place at the desk. Mike follows and stands behind the desk. The borrower, Mr. Burger, and the contractor, Mr. Nailer, take their places at the front of the room.)

Mr. Tanner: (taking the check for $8,000 and deposit slips to the bank)

Good morning, Mr. Checkman, please deposit this check to my account. These new consolidated schools are really good for my business.

Mr. Checkman: Thank you.

(He stamps the deposit slips and gives the duplicate to Mr. Tanner. Mr. Tanner returns to his regular seat in the classroom.)

Mike: (Leaning over Mr. Checkman's shoulder)

Are we going to create more money?

Mr. Checkman: Shh!

(Mr. Checkman is writing.)

Let's see. 20% of $8,000 is $1,600.

(He puts the deposit form and the money in an envelope, marked "required reserves" and gives it to Mike.)

Mike: (Already has his REQUIRED RESERVE envelope open)

Yes, I know. This $1,600 is the 20% reserve requirement which I will take to the "Fed" because it is a banking regulation. But, do you mind if I stay for a minute? Here comes someone.

(Enter the borrower, Mr. Burger, from The Hot Spot restaurant.)

Mr. Checkman: Good morning, Mr. Burger.

Mr. Burger: Good morning, Mr. Checkman. As you know, they built that new school near my restaurant. The chances are good that my business will really boom when school starts, especially during football and basketball season. I have an estimate from the contractor, Mr. Nailer, to remodel the west side for a "carry-out" section, but I will need to borrow $6,400.

Mr. Checkman: That is a good investment; I will be glad to arrange for the loan.

(Mr. Checkman prepares the note.)

Please sign this note for $6,400.

(Mr. Burger signs the note.)

Thank you. This is your checkbook. Good luck!

(Mr. Checkman records the demand deposit--a credit to the account of The Hot Spot restaurant. He leaves the book open.)

Mike: (While Mr. Checkman is recording the demand deposit, Mike is sketchily writing on the chalkboard.)

$$\begin{cases} \$8{,}000 \\ \underline{1{,}600} \\ \$6{,}400 \end{cases}$$

Ah! You have loaned all of the cash on hand after giving me the required reserves. You have created $6,400! That shows that Mr. Burger can write checks for $6,400.

Mr. Checkman: Right!

(Moving the record book closer to Mike)

We call it a demand deposit.

Mike: Oh, yes, I understand. Well, good-by, Mr. Checkman.

(Mike takes the required reserves to Mr. Monetary who credits the Reserve Requirements account with $1,600. Mike stays with Mr. Monetary while the contractor, Mr. Nailer, and Mr. Burger are discussing the contract.)

Mr. Checkman: Good-by.

Mr. Burger: (Looking at a trade magazine)

I agree with you. This looks like the best plan. When can you complete the job? I have arranged to borrow the money from the 2nd National Bank, and I will pay you upon completion of the job.

Mr. Nailer: I assure you that it will be completed in 30 days. Thank you for the contract.

(Mr. Burger returns to his seat in front of the room.)

(Mike returns to Mr. Checkman's desk.)

Mike: Mr. (teacher). We created $6,400 when Mr. Checkman loaned the money to Mr. Burger. Did you record it?

(The teacher records the $6,400 and identifies it by writing "2nd National Bank". He adds the demand deposits--$10,000, $8,000, and $6,400 while Mike watches.)

What do you know! Mr. Speed deposited $10,000 in checks and currency, and now we have demand deposits amounting to $24,400.

(Mr. Checkman tears a page off the calendar to indicate the passing of time.)

Mr. Burger: (Takes a check for $6,400 to Mr. Nailer)

You did a fine remodeling job. I have a check for you--$6,400.

Mr. Nailer: Thank you. Good-by.

(Mr. Burger returns to his regular seat in the classroom.)

END OF SCENE II

(Mr. Monetary remains at the chalkboard. All others, except Mr. Nailer, return to their regular seats. Mr. Nailer remains in his seat at the front of the room.)

SCENE III

CAST:

Mr. Monetary - the banker for the Federal Reserve Bank is held over from Scene II.
Mr. Nailer - the contractor, who becomes the depositor, remains at the front seat which he occupied in Scene II.
Mike - the Brinks messenger is held over from Scene II.
Mr. Loanaker - the banker for the 3rd National Bank is seated at the desk.
Mr. Eggbert - the borrower, who comes to the bank to borrow $5,120 for new cafeteria equipment for the school.
Mr. Cooke - the salesman for the Buckeye Fixture Company.

Setting: 3rd National Bank

Teacher: May I present Mr. Loanaker, the banker for the 3rd National Bank.

(The banker takes his place at the desk. Mike follows and stands behind the desk. Mr. Eggbert, the borrower, is seated at the front of the room on the left side, and Mr. Cooke, the salesman, is seated at the front of the room on the right side near Mr. Nailer.)

Mr. Nailer: (Takes the check for $6,400 and the deposit slips to the banker.)

Good morning, Mr. Loanaker. I want to deposit this check to my account.

Mr. Loanaker: (The banker stamps the deposit slips, gives the duplicate copy to Mr. Nailer, the depositor, and records the amount of the demand deposit - a credit to Mr. Nailer's account. Mr. Nailer returns to his own seat.)

20% of $6,400 is $1,280. That is $1,280 for required reserves and $5,120 cash on hand. Mike, this is a reserve deposit. Take it to the "Fed".

Mike: Yes, sir.

(Mike takes the required reserve to Mr. Monetary, who records the amount and name of the bank in the <u>required reserves</u> account.)

(Enter Mr. Eggbert. He goes to the desk of the 3rd National Bank.)

Mr. Loanaker: Good morning, Mr. Eggbert.

Mr. Eggbert: Good morning, Mr. Loanaker. You may recall that I applied for a loan for purchasing the new cafeteria equipment for the school. As you know, I was granted the contract.

Mr. Loanaker: Yes, sir. We can grant you a loan for $5,120. I have the papers ready for you. Please sign the note here (indicating the place to sign). This is your checkbook.

Mr. Eggbert: Thank you.

(The banker makes the entry to the account of Mr. Eggbert for $5,120. Mr. Eggbert goes to the desk of Mr. Cooke to look at equipment brochures.)

Mr. Eggbert: You may fill my order for the cafeteria equipment according to the specifications. I have arranged for a loan at the 3rd National Bank.

(Mr. Eggbert returns to his seat at the front of the room.) (In the meantime, Mike returns to the desk of Mr. Loanaker.)

Mike: Did you lend the $5,120? You know, I am really interested in this banking business. I am keeping a record of the money that is created.

Mr. Loanaker: Yes, I did.

Mike: (Turning to the chalkboard and, speaking deliberately, recalls the transaction and makes the computation.)

Mr. Nailer deposited a check for $6,400 and you sent $1,280 to the "Fed". That means that you created $5,120.

Mr. Loanaker: That is right, Mike. You have the idea, don't you.

Mike: (Addressing the teacher who is keeping the record at the chalkboard.)

We have increased the money supply again, Mr. (teacher). This time we added $5,120 to the money stream. How much additional amount of money altogether?

Mr. (teacher): (Adding on the chalkboard) $8,000 + $6,400, plus $5,120 = $19,520 has been created as a result of the $10,000 deposit by Mr. Speed.

Mike: Altogether, depositors can write checks for $29,520.

(Mr. Eggbert goes to Mr. Cooke's desk.)

Mr. Eggbert: (presenting the bill) I have completed the school cafeteria job and it has been inspected.

(Writing the check after looking at the bill) Yes, I know, - and it seems to be working fine. - $5,120. (Mr. Eggbert remains at Mr. Cooke's desk while he writes the check.)

Mike: Mr. Loanaker, when Mr. Cooke deposited that check in a bank, the bank can create more money by making another loan, can't it? (Mike turns to the chalkboard and writes.) 20% of $5,120 is $1,024. Then, I will take $1,024 to the "Fed" for the required reserves, and the bank can lend $4,096 to someone who can use it to improve his business. Really, it <u>is</u> money in the bank because he can write checks for that amount to pay for the project.

Mr. Loanaker: Yes, it <u>is</u> money.

Mike: What bothers me is that we are going to get an awful pile of money, someday. Where does it stop?

Teacher: Excuse me, may I interrupt. The class has observed this accumulation of money, too. How would you answer Mike's question?

II. Second Situation: The Fed in Action

In the last situation you were introduced to the idea that banks could create money. Can banks create as much money as they want? Are there any limitations on the banks' power to create new money? We saw in the last learning situation that banks must keep a certain amount of their money in the Federal Reserve Bank. This then becomes a limitation on how much the banks can loan. The purpose of this situation is to show how the requirement set by the Fed can influence the money supply.

The Reserve Requirement

Steve Watkins has just started working at a gasoline station. He's making $25 a week and spending $15. Therefore, he had $10 cash each week which he was putting in a cigar box in his desk. Soon he had $100 in his box, and his dad suggested he put the money in a bank. Steve wanted to save the money towards buying a car, so he decided to put it in a checking account. This story will follow the process of what the bank may do with Steve's $100 deposit. Each of the banks involved in the story has an actual name such as First National Bank or Columbus Trust, but for simplicity we will refer to these as Bank I, Bank II, etc., to show that different banks are involved. We will also assume that banks must keep 20% of all of their deposits in the Federal Reserve Bank.

The $100 which Steve deposited in Bank I allows this bank to make loans up to $80. Why can only $80 be loaned and not $100? You should recall from the previous situation that Bank I had to place $20 in the Federal Reserve.

Marc Kneller has been saving his money to buy a motorcycle. Motorcycles are on sale right now, and he figures this is the best time to buy, but he is short $80 of the purchase price. Marc has a job in a super market and has kept his savings up to this time in Bank I. The bank is willing to loan him the necessary $80. He takes his cash and the bank's check for $80 to

the Davidson Motorcycle Co. and buys the motorcycle. The Davidson Company deposits Marc's check in Bank II. Bank II then places 20% of the $80 ($16) in the Federal Reserve Bank, and now has $64 available for loans.

Mr. Crandall's wife was sick, and he needs $64 to pay the hospital. He is a regular depositor at Bank II, and he goes there to ask for a loan. Bank II has the amount Mr. Crandall needs and since he is a regular customer of the bank, they loan him $64 with which he pays the City General Hospital which, in turn, deposits the $64 in the bank. The bank now has additional money to loan as shown below.

The vast number of possible transactions can be shown through use of the following table. The dots (···) used in the table signify an infinite number of transactions, all of which will total approximately the sum shown at the bottom of the table.

Deposits	Reserve Requirement	Loans
$100.00	$20.00	$80.00
80.00	16.00	64.00
64.00	12.80	51.20
51.20	10.24	40.96
40.96	8.20	32.76
32.76	6.55	26.21
26.21	5.24	20.97
20.97	4.19	16.78
16.78	3.36	13.42
13.42	2.68	10.74
·	·	·
·	·	·
·	·	·
$500.00	$100.00	$400.00

Financing a Ship

Jack was in the Hobby Shop admiring the new ship models which had just come in. Mr. Brewster, the owner, saw him looking at them and came over to talk to him. "I see you in here a lot, Jack. You make a lot of models, don't you?"

"Yes, I have about ten already and want to start on another one. Now I just have to decide what I want," said Jack as he browsed around.

Suddenly Mr. Brewster said, "Jack, I just had an idea. I need some new models to put in the window. If you do a really good job with the next one you make, bring it to me and let me see it. If the model is good enough, I'll buy it back from you to put on display."

Jack was very excited about this. He would have the fun of making the model, plus the fact that he could make some money on it. "Mr. Brewster, that sounds like a great idea. How exactly would it work?"

"Well," answered Mr. Brewster, "you would buy the model, which costs $5, and after you put it together you would bring it in for me to check. If I think it is good enough, I will buy it back from you for $7. Does that sound fair to you?"

"Fair!" yelled Jack. "I think it sounds great. I don't have enough money today, though, so I will have to come in tomorrow to buy it."

Mr. Brewster said he would be looking forward to seeing him the next day to buy the model and a little while later with the finished product. "Jack, I would like to change my display in a month, so you will have to have it done by then."

Jack was very excited as he left the Hobby Shop, but suddenly he calmed down. He didn't have any money and he didn't know where to get any. On his way home he ran into his best friend, Ted. "Hi," shouted Ted. "What's new?"

"I just got a great offer from Mr. Brewster. Can I borrow five dollars?" Jack rattled.

Ted was confused. "Who is Mr. Brewster and why do you need $5? Explain slowly, please, so that I can figure it out."

Jack explained what had happened in the Hobby Shop and concluded, "So you see, I need $5 right away to buy that model. If you could loan it to me I would pay you back with interest."

Now Ted was the one who was excited. "You say you would pay interest, too? How much?"

Jack thought for a minute and then said "Fifty cents on five dollars. Will you take it or not?"

Ted then admitted he didn't have the money, either, although it sounded like a great idea. He said he would talk to his parents that night and see what they said about it. Maybe he could borrow it from them to loan to Jack. The boys parted as Ted said "I'll let you know in the morning."

Now both boys had problems. They both wanted to borrow money, but Jack could borrow only if Ted could arrange it with his parents. Ted talked to his parents that night at supper and told them about the conversation he had had with Jack. They thought the loan was a good idea, but they weren't

sure if Jack would be able to sell the model to the Hobby Shop. Ted said he had seen some of the models Jack had put together and that they were very good. Ted's parents finally concluded that Jack was a good risk and they would give Ted the money to loan to him. However, Ted's parents decided that they would need some sort of guarantee that the loan would be paid back. After some thought, Ted decided that since he didn't wear his watch much he would give it to his parents as a guarantee. They agreed to give the watch back to him when he repaid the loan they made.

The next day Ted gave the $5 to Jack. Jack bought the model and, after a lot of hard work, sold it to the Hobby Shop for $7. A month later Jack paid Ted $5.50 and Ted repaid his parents $5 and at the same time got his watch back.

Banks are involved in a similar process. For instance, the Ajax Widjit Company wanted to expand its facilities and came to the Smith Street Bank for a loan. Although the Smith Street Bank felt that Ajax Widjit was a good risk, they had no excess reserves with which to make a loan, so they applied to the Federal Reserve Bank. Since the Smith Street Bank's assets included the IOU of the Bouncy Bubble Bath Company, they borrowed on it (discounted it with the Federal Reserve Bank). The IOU was for $1,000 but the Fed would only loan them $970, although they would have to pay back $1,000. The $30 difference is known as a discount and is a type of interest payment. The Smith Street Bank took the $970 which the Fed loaned to them and loaned it to the Ajax Widjit Company at 5 percent interest per year. Ajax Widjit made the expansion, and from the increased profit which this brought them they paid back the Smith Street Bank $970 plus 5 percent interest or a total of $1023.75 (principal + $48.75 interest). The Smith Street Bank then paid the Fed $1,000 as they had promised, and the Fed gave them back the IOU of the Bouncy Bubble Bath Company which they had discounted. This whole process is known as "rediscounting".

In this way the Federal Reserve Bank can influence the money supply by raising or lowering the diccount rate. If the Fed feels the money supply is increasing too rapidly, they can raise the discount rate which will discourage banks from borrowing because they can no longer make a profit on a loan. If the banks are unwilling to borrow money from the Fed, they will not be able to make as many loans to consumers. Since some loans are always being repaid, the money supply is decreased if banks are not able to make more loans. On the other hand, if the Fed thinks the economy is entering a period of deflation and the money supply is decreasing, they can lower the discount rate which will allow banks to borrow more easily. This will increase the money supply by allowing the banks to create more demand deposits.

Open Market Operations

The Federal Reserve System consists of twelve district banks located throughout the country. The activities of these banks are coordinated through the Board of Governors which is a permanent committee appointed by the President of the United States. The Board of Governors and presidents of five of the

district banks make up the Open Market Committee. The main task of this committee is to buy and sell government securities in order to influence the money supply.

Let us see how this might be done. Suppose for instance that there were indications that the nation was entering a period of inflation. At a meeting of the Open Market Committee a decision would be made to counteract this inflationary tendency. How might this be done besides the ways already suggested? The Open Market Committee would vote to sell government securities. This would contract the money supply because banks would use their excess reserves to buy these securities and thus have less money to loan to consumers. In other words, they are restricted in their ability to create money through demand deposits. This in turn cuts down on the ability of the consumer to spend and hopefully holds back the tendency towards inflation.

What action is the Open Market Committee likely to take if a deflationary tendency is noted? Why might commercial banks be willing to sell securities to the Fed?

III. Third Situation: The Relationship Between Monetary and Fiscal Policies

This situation will be a class discussion conducted by the teacher.

Unit 14: International Trade

The two preceding units on money and financial institutions expanded the concept of flows by illustrating the role played by these institutions in providing a medium in which the flow of economic activity operates. Before we move to a study of the ways in which nations coordinate their economic activities, one major extension of the flows concept remains to be unfolded. The basic idea that is unfolded in all the units in this section of the course entitled flows is the continuous movement of goods and services in exchange for a continuous movement of money. This movement may be studied in terms of a few individuals, within a town, between towns, within a state, between states, within a nation, or between nations. In general, the preceding units analyzed the flows within a nation; in this unit the emphasis will be on flows between nations. Much of the previous analysis can be extended directly into this larger domain but the fact that the flows are now crossing national political boundaries does create some special problems which require some special analytical tools.

I. First Situation: An Expanded Conception of Exports and Imports

This situation will be covered entirely by classroom discussion.

II. Second Situation: The Balance of Payments

The Balance of Payments[1]

Take a jigsaw puzzle and dump it out of its box. You will see a confused jumble of color and contour.

Then begin fitting the puzzle together, piece by piece. By the end of an evening you should have before you a picture as clear as a trout stream in the Poconos or Mt. McKinley on a crisp autumn afternoon.

One reason so many people have difficulty understanding the balance of payments is because they see it as a jumble of unconnected parts. Maybe the way to present the picture most clearly is to assemble the pieces, one by one.

For the sake of simplicity let's think of all the nations that the United States does business with as one country. We'll call it "Residuum", and we'll assume that only one currency, the dollar, is involved.

The United States buys (imports) goods from Residuum and sends dollars in settlement. The United States also sells (exports) goods to Residuum and receives dollars back in payment.

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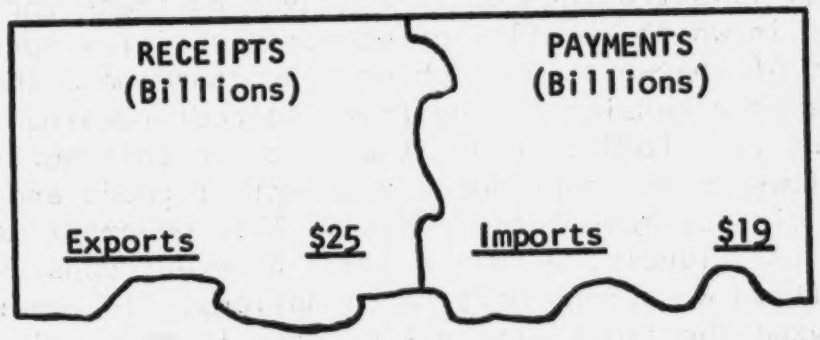
[1] "The Balance of Payments." Federal Reserve Bank of Philadelphia, Series for Economic Education, 1965.

These money flows are the first pieces in the picture. In 1964 the United States bought, or imported about $19 billion worth of goods from Residuum and we sold, or exported about $25 billion. As a result of these transactions, the first pieces of our balance of payments looked like this--



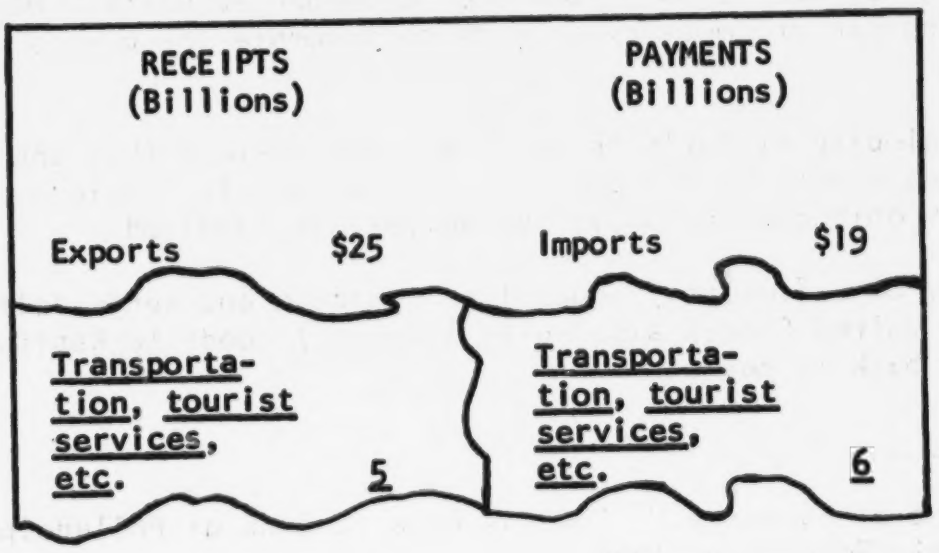
In other words, we had a favorable balance of $6 billion on trade alone. Although specific products may have trouble, American goods, in general, obviously are able to compete very well with those produced in other countries.

It is true that we imported more crude, or raw materials then we exported and the same applies to manufactured foodstuffs. But when you come to other manufactured goods such as industrial machinery, computers, electrical apparatus and so on, our exports, at $15 billion, are more than twice as large as our imports.

If only goods were included in the balance of payments, we would have no problems. These are other pieces in the picture, however.

Every June hundreds of thousands of American tourists pack up their best clothes, get their shots and travel to Residuum. Together with businessmen and government officials they spent, in 1964, about $6 billion for transportation abroad, accommodations and other services.

People from Residuum spend about $5 billion for similar services in the United States and so we add the following pieces to the picture:



Several important areas of Residuum are enjoying unprecedented prosperity. Business is booming there and Americans are finding opportunities to invest their money and make a good profit. There are three main ways to invest abroad: (1) build, or buy a plant in a foreign country; (2) buy the stocks and bonds of foreign firms or governments; and (3) buy the short-term (less than a year) obligations of foreigners. In 1964, Americans invested approximately $6 billion abroad.

Our net annual foreign investment has risen rapidly. In 1950 it was only $1 billion and in 1960 it was still under $4 billion. One of the fastest growing categories in the last year or two was long-term loans made abroad by American banks.

Our foreign investments, if wisely made, will yield interest and dividends. In 1964, the net income on our accumulated foreign investments was about $5 billion. Thus the picture now looks like this:

RECEIPTS (Billions)		PAYMENTS (Billions)	
Exports	$25	Imports	$19
Transportation, tourist services, etc.	5	Transportation, tourist services, etc.	6
Income on foreign investment	5	Investment abroad	6

Next, the many activities of the U.S. Government abroad must be considered. Washington spends about $3 billion to maintain American Armed Forces in foreign countries. Then we grant certain nations about $4 billion under the foreign aid program. Our government also makes loans and investments abroad, largely in underdeveloped areas and they are included here.

RECEIPTS (Billions)		PAYMENTS (Billions)	
Exports	$25	Imports	$19
Transportation, tourist services, etc.	5	Transportation, tourist services, etc.	6
Income on foreign investment	5	Investment abroad	6
		Military expenditures	3
		U.S. Government grants and aid	4

Add the "Other" or miscellaneous categories, total the receipts and payments, subtract one from the other to determine if there is a deficit, or a surplus, and the balance of payments picture for 1964 is now complete.
(See next page.)

RECEIPTS (Billions)		PAYMENTS (Billions)	
Exports	$25	Imports	$19
Transportation, tourist services, etc.	5	Transportation, tourist services, etc.	6
Income on foreign investment	5	Investment abroad	6
		Military expenditures	3
		U.S. Government grants and aid	4
Other	2	Other	3
	$37		$40
Deficit	$ 3		

So you see the hefty margin of American exports over imports was more than wiped out by Government grants, military outlays, tourist spending and, most recently, by a surge of American investment abroad. After all parts have been fitted in place we paid out about $3 billion more to Residuum than we received.

In essence, then, our balance of payments simply is a record of all monetary receipts from, and payments to, the rest of the world.

Why we worry

The United States has had an unfavorable balance for 14 out of the last 15 years. Because of the excess of our payments over receipts during this period, foreigners now own huge quantities of U.S. dollars. Essentially, foreigners can do three things with these dollars:

Keep them in banks,
Invest them in U.S. securities,
Exchange them for gold.[2]

Since 1958, foreigners have converted over seven billion dollars to gold. Continuing balance of payments deficits and gold losses have led some to doubt the soundness of the United States dollar.

Although the real value of the dollar depends on its purchasing power and the strength of the American economy, many nations interpret payments deficits and gold losses as signs of potential weakness. The state of our currency is of vital importance abroad. Numerous countries use dollars as a backing for their own money. They feel that dollars are the next best thing to gold because they easily can be converted into gold and, in turn, to other currencies, at a fixed price.

In addition, foreigners use U.S. dollars to settle many business transactions, not only with the United States, but among themselves. Actually the dollar is sort of an international currency in business all over the world.

If other countries lose confidence in the stability of the dollar, undoubtedly they also will lose confidence in the United States and its political policies. Nobody wants to follow a weak leader.

As William McC. Martin, Jr., Chairman of the Federal Reserve Board, said, ". . . if the financial standing of the United States declines, the power and influence this country wields in the world's affairs . . . inevitably will decline as well."

There is no question that we must keep the dollar strong both in terms of purchasing power at home and in terms of gold abroad. So many free nations depend on it. But how do we do it? One way is to get our receipts from, and payments to Residuum in balance and keep them that way.

Freeway Forum

Narrator: As Ed Rolfe's car sped along the freeway leading out of San Francisco, Ed and his three friends listened to a broadcast concerning U.S. overseas trade. The commentator had just finished his broadcast by saying that in 14 out of the last 15 years the U.S. had spent more in foreign countries than it received from them. At this point Ed leaned over, turned off the radio and the following conversation got under way:

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[2]For a more detailed discussion, see the earlier pamphlet in this series entitled "GOLD!"

Ed: Did you hear what he just said? That guy said that for 14 out of the last 15 years we've been shelling out more than we're taking in. Those idiots in Washington--how long do they think we can keep this up?

Bill: Listen to the genius here. I suppose you've got a solution to the problem.

Ed: Sure--it's simple. We're paying out more than we're taking in--right! Well, if we stopped buying all that French perfume, and all those German cars and Japanese cameras and all the rest of that foreign stuff, we'd get rid of the problems in a hurry.

Steve: I'm with you. American products are better anyway. People don't realize that every time they buy a foreign product some American is cheated out of work.

Herb: Wait a minute. Do you think it's okay for us to sell our products to foreign countries?

Ed: Sure, why not?

Herb: So you're saying we should sell as much as we can to other countries but buy as little as possible from them. How are they going to get the money to buy our stuff if we don't buy anything from them?

Ed: I don't understand what you're driving at, but I still think we ought to cut down on all this imported stuff.

Bill: You drink an awful lot of coffee, Ed; and how about all the chrome on your car, and bananas and . . . .

Ed: Come on, that's different. I'm not talking about those things. I mean the kind of things we can produce right here shouldn't be brought in from outside.

Bill: But the guy on the radio said that we are already selling a lot more things than we are buying. You guys aren't talking about the real problem. If we stopped giving away all that money in foreign aid, we wouldn't be on the short end year after year.

Steve: I still agree with Ed, but what you say seems to make a lot of sense, too. While I was cutting this man's hair the other day, he said last year we gave away almost three billion dollars.

Herb: According to some figures I read, that's about the same amount that we spend on military aid, too.

Bill: Well, I can see spending money on defense but not on these give-away schemes. We give all this money away to foreigners and get nothing out of it--that's what I object to.

Herb: I even question some of the money we're pouring into foreign armies. Are we getting our money's worth? And the money we're spending on our own soldiers' wives and families over there--that's another big chunk of money pouring out of the U.S.A.

Ed: You didn't complain about the fancy expense account your company allowed you when they sent you to Japan last year, Herb. How many good American dollars did you spend over there?

Herb: That's different. I was on an important job helping my company establish a new chemical processing plant.

Steve: How come your company spent all that money in Japan instead of setting up a new plant here? We ought to put a stop to that sort of thing.

Herb: By putting the plant in Japan we were able to cut production costs. I noticed that the clothing store you work in, Ed, sells suits made with our fibers. In fact, the suit you have on looks like it was made with them. Did you complain about getting a first-rate suit at a bargain price?

Ed: Stop changing the subject. Sure, I buy the best suit I can get for my money, but before you fellows started setting up plants all over the world the best buy was a 100% American made suit.

Herb: <u>What</u>? And you're the guy that's always saying that free competition is what has made America great. Are you afraid of some real competition?

Steve: Competition between American companies is one thing, but trying to compete with countries that pay lousy wages is something else.

Bill: I heard that the wages in Europe and Japan aren't so bad anymore. The real reason they can undersell us is that we built all those modern factories for them while our own factories are still using outdated machinery.

Steve: Turn the radio on. I want to hear the weather report.

Narrator: The conversation turned to the weather and the balance of payments problem was lost in speculation about the influence of atomic testing on the rainfall.

Solving the Payments Problem[3]

During recent years, the Federal Government took a number of steps designed to bring flows of dollars into, and out of, the United States in closer balance. The payments deficit, however, did not diminish significantly.

In February, 1965, President Johnson announced a comprehensive program, which prescribed corrective measures in most major categories of our international receipts and payments. The President concluded that the complex causes of our imbalance--ranging from world-wide turmoil to Mrs. Brown's desire for Lowestoft china--called for diversified action on many fronts.

More exports?

It would be desirable to increase American exports so that more money would flow into this country in payment for our goods. Indeed, the government already has several programs designed to increase U.S. exports by providing more information and services to U.S. firms wishing to sell abroad. In addition, we conduct 50 full-scale trade shows to exhibit U.S. goods overseas. More special financing and insurance arrangements are also in the works.

As in most balance of payments categories, beneficial actions seem to have offsetting reactions. Foreign trade is a reciprocal thing; if we convince foreigners to buy more here they also will want to sell more here. And, of course, an increase in our sales abroad will add to U.S. prosperity and income flows, which, in turn, will make Americans willing and able to buy more imports.

If we should pass a law to limit imports, foreign countries would do the same, which would reduce their purchases here (our exports). Since we export more than we import, we might wind up worse than before.

This is not to say that our exports cannot be increased, relative to our imports but it will not be easy to achieve large increases in a short time.

Tourists

Several years ago the government cut from $500 to $100 the amount of duty-free foreign goods that a tourist may bring home and the President has requested legislation making a further cut to $50. A See-America-First drive is getting under way and we are trying to persuade more foreign tourists to visit the United States.

Nevertheless, the fact remains that foreign countries have an exotic appeal to millions of Americans, more and more of whom now can afford the trip. They will not be pleased if their freedom to travel is impaired.

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[3]"The Balance of Payments." Federal Reserve Bank of Philadelphia, Series for Economic Education.

Investors

In 1964, Congress passed a tax which reduces the yield on certain foreign securities sold in the United States by about one per cent a year. A similar tax is being applied to long-term loans to foreigners made by U.S. banks. The idea is to make dollar loans abroad more expensive to foreign borrowers and less rewarding to American lenders.

A special program of voluntary credit restraint was begun in early 1965. President Johnson asked American banks, and other lenders, to limit their loans to foreigners, and he urged American corporations to hold down their investments abroad.

There are several possible reactions to this phase of the Administration's program. If we successfully reduce U.S. loans and investments abroad we will improve our balance of payments, to be sure, but we run the risk of pinching the credit available to our friends and allies. Insofar as our loans to foreigners are used to finance purchases of American goods, a curtailment might reduce our exports, and worsen our imbalance by increasing the margin between U.S. receipts and payments.

In an attempt to counter such reactions, the President's program gives special consideration to export financing and investments in underdeveloped nations.

Military spending

The Pentagon spends almost $3 billion a year to maintain our armed forces overseas. A great many problems would be solved if all the nations of the world could live in harmony and we could eliminate this spending entirely. Unfortunately that time has not yet come.

Some cutbacks in military spending abroad have been made and the President promises an "intensified effort" to achieve further reductions. But with serious difficulties in Southeastern Asia and continuing cold-war pressure elsewhere, one wonders how much overseas military spending can be trimmed in the foreseeable future.

Nevertheless, we might encourage or require countries in which we maintain armed forces to buy more American goods as a balance-of-payments offset. These reciprocal agreements already exist and their number and scope might be expanded.

Foreign aid

In 1964, the United States gave $4 billion in grants and aid to other countries. The basic purposes were to assist free nations in their own defense programs and to help under-developed and newly-emerged nations to raise their standards of living, which too often are appallingly low. Sharp reductions in U.S. aid, therefore, could make these desirable objectives more difficult to achieve.

Actually, the aid programs contain built-in offsets that lessen adverse effects on the balance of payments. About 85 per cent of the money given overseas is used to buy goods in this country thus increasing our exports. Some of these returning funds have strings tied on them by U.S. government regulation and some are spent here because we offer the best products at the most reasonable prices.

In foreign aid, too, President Johnson has promised continuing action to improve effects on the balance of payments. No doubt further overall efficiencies are possible, and many countries, which recently have prospered, should require less aid, or none at all. In fact, there is no reason why a number of now-affluent nations, many of whom we helped back on their feet in the early postwar period, cannot themselves offer more financial aid to backward countries.

Certainly our foreign aid spending can be cut, but because of our political policies and those of other industrialized nations, major reductions probably will not be easy or quick.

Imbalance, yesterday

Nations have been having problems with their balance of payments for hundreds, maybe thousands of years. In most cases trade was the major cause. One nation would import more than it exported and its total payments to the rest of the world would exceed its receipts. Usually that nation's economy had "overheated" and inflation and inefficient production at home had made domestic goods and services less attractive than foreign ones.

The time-honored cure for such a problem was to reduce the amount of circulating money in the country which was buying more abroad than it was selling. (Under the gold standard of years gone by, gold would leave the import-heavy country and the money supply there would shrink automatically.)

With less money in circulation domestic prices would tend to fall. This would reduce income and purchasing power and, in turn, the demand for imports. In addition, lower prices and increasing competition among producers would make domestic goods and services more attractive to foreigners, thereby increasing exports.

A smaller money supply also should increase interest rates which would stimulate the inflow of investment money from other countries.

In these ways receipts from the rest of the world would increase, payments would decrease and the imbalance would correct itself.

Imbalance, today

Many people believe we should use the tight money-high interest cure here and now. But others are quick to point out that our payments problem does not stem from the traditional causes--inflation, efficient production, etc. Indeed, our wholesale prices have been quite stable for the better part of a decade and our exports are running at a rate more than $6 billion above

our imports. Our present problem is a rather unique one, caused in large measure by the United States' position of political and economic leadership in the struggle against Communism.

Another consideration seems to make sharp tightening of money undesirable at this time. Such a step, with its accompanying rise in U.S. interest rates, might choke off the prosperity we have been enjoying for so many years now. This would have most serious consequences, not only here at home where unemployment remains a problem, but all over the free world. A major business setback here would spread quickly to other nations.

Conclusion

After more than a decade of deficits and dwindling gold reserves, the nation now is facing its balance of payments problem squarely. We appear convinced that the imbalance cannot continue indefinitely, and a number of specific steps have been taken.

The present programs are considered by many to be well suited to the present problem. They are aimed at trouble spots with some precision, which should minimize offsetting reactions.

The American free enterprise system of production, has shown itself to great advantage in world competition. Thus a solution to the payments problem should be as compatible as possible with free enterprise. The voluntary credit restriction program, as opposed to additional tiers of government regulation, meets this requirement.

Yet it will be a miracle if the payments problem is solved quickly, or easily. Many of the proposed solutions should help and, if they don't, others will be tried. But it is well to remember that these are temporary programs. Even if they manage to bring our international payments in balance it is by no means certain they can keep it there indefinitely.

The best long-run solution is to maintain a vigorous and growing deomestic economy. In this way we will encourage domestic investment and attract swelling inflows of foreign funds. Only a sound, competitive environment will nourish the inventiveness and efficiency to make American goods ever more desirable in foreign markets.

In the final analysis, it is the strength of the American economy, the vitality of free business and labor, that must support our international political policies and goals.

III. Third Situation: The Importance of International Trade

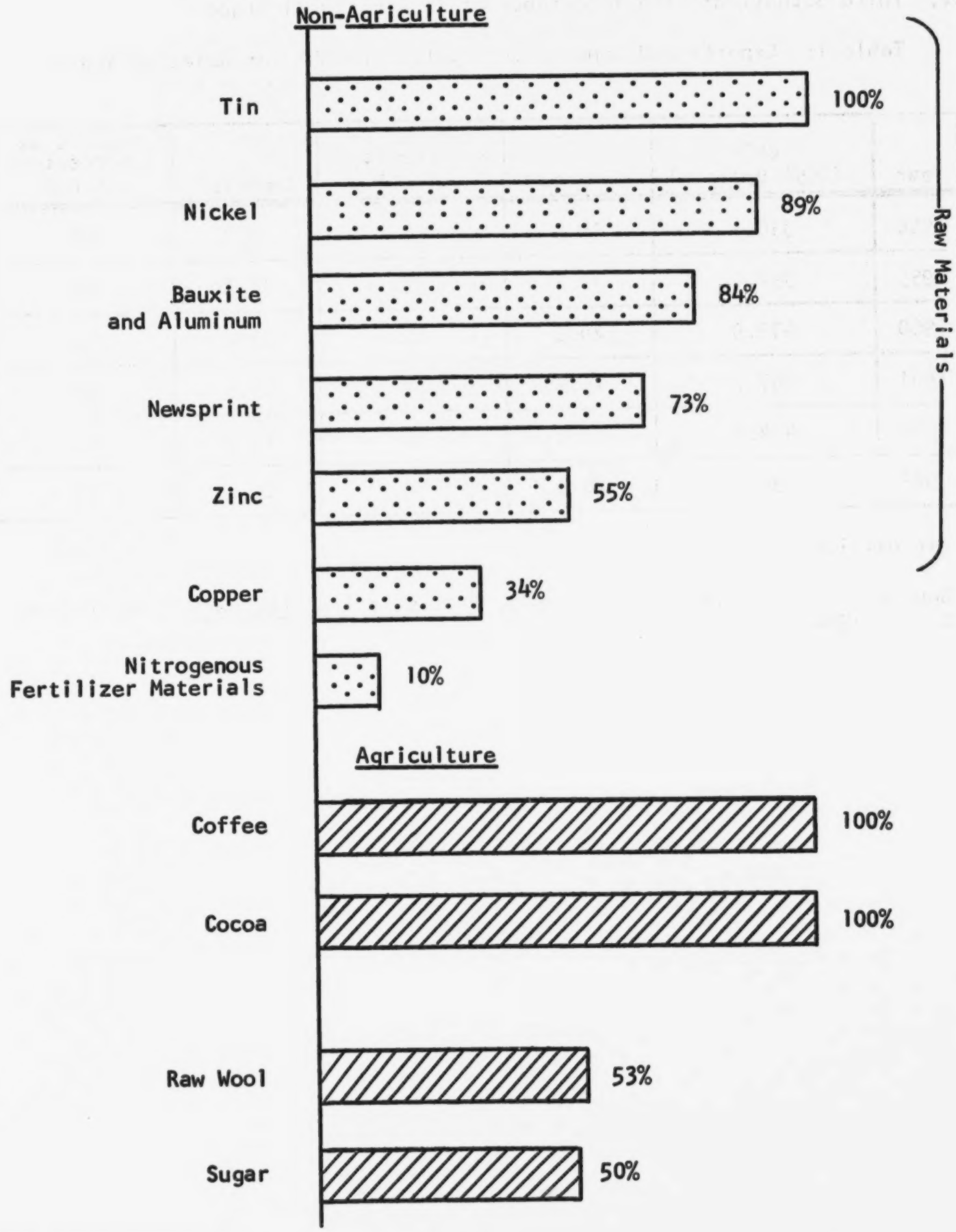
Table 1: Exports and Imports in Relation to GNP for Selected Years

Year	GNP* (1954 Dollars)	Exports*	Exports as a percentage of GNP	Imports*	Imports as a percentage of GNP
1950	318.1	14.5	5%	14.2	4%
1955	392.7	19.2	5%	18.3	4%
1960	439.9	24.9	6%	23.2	5%
1961	447.7	25.5	6%	23.3	5%
1962	474.8	27.0	6%	25.2	5%
1963	492.9	28.8	6%	26.2	5%

*In billions of dollars

Source: U. S. Bureau of the Census, Statististical Abstract. Washington, D. C., 1964, p. 323.

IMPORTS USED BY AMERICAN INDUSTRIES[4]
AS A PERCENTAGE OF TOTAL USED IN THE UNITED STATES, 1960



[4]Taken from pamphlet published by the U. S. Department of Labor, "The American Worker's Stake in Foreign Trade," 1961, p. 5.

DOMESTIC EMPLOYMENT ATTRIBUTABLE TO U. S. EXPORTS, 1960
State Distribution (In thousands)[5]

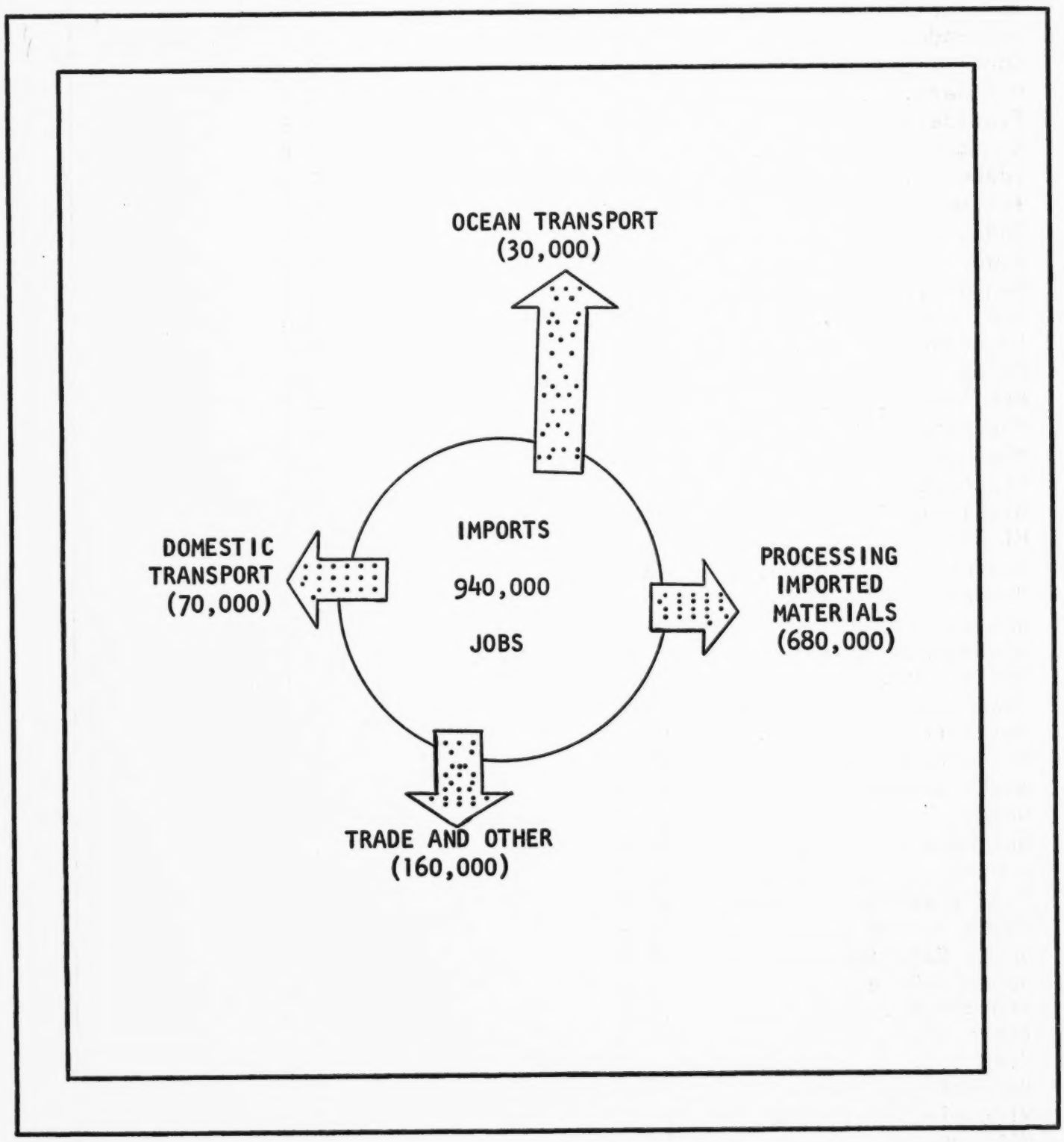
State	Total	Export employment as a percent of State employment
Alabama	71.3	9.4
Arizona	21.8	7.1
Arkansas	71.5	14.0
California	213.8	4.9
Colorado	22.7	4.8
Connecticut	51.7	6.1
Delaware	7.4	5.0
Florida	50.8	4.3
Georgia	73.2	7.0
Idaho	11.2	5.9
Illinois	197.3	6.1
Indiana	83.7	5.7
Iowa	48.8	5.7
Kansas	39.8	6.6
Kentucky	52.8	6.8
Louisiana	70.2	8.8
Maine	9.2	3.4
Maryland	39.0	4.8
Massachusetts	71.7	4.2
Michigan	115.4	5.2
Minnesota	56.3	5.3
Mississippi	76.9	13.6
Missouri	66.5	4.6
Montana	12.7	7.2
Nebraska	25.4	5.5
Nevada	2.9	3.2
New Hampshire	7.6	4.0
New Jersey	93.6	5.1
New Mexico	13.5	6.1
New York	241.5	4.4
North Carolina	89.2	6.2
North Dakota	14.0	7.6
Ohio	174.8	5.9
Oklahoma	43.8	7.1
Oregon	23.3	4.6
Pennsylvania	190.8	5.5
Rhode Island	11.5	4.5
South Carolina	48.8	7.2
South Dakota	11.0	5.6
Tennessee	70.4	6.9
Texas	231.3	9.1
Utah	11.2	4.8
Vermont	6.5	5.4
Virginia	63.9	6.2
Washington	57.1	7.5
West Virginia	32.1	6.9
Wisconsin	65.6	5.0
Wyoming	6.2	6.4
Total[6]	3,081.7	5.8

[5] Ibid., p. 10.

[6] Alaska, District of Columbia, and Hawaii are not shown separately but included in the total.

IMPORTS AS A SOURCE OF JOBS FOR AMERICANS[7]

1960



[7]Ibid., p. 11.

Unit 15: Types of Economic Systems

In Units 1 through 6 you examined in datail the notion of scarcity and the basic economic decisions which the existence of scarcity makes necessary. This was followed by an exploration of the notion of the flow of goods and services and the flow of money in Units 7 through 14. The third major concern of an economy, namely, how the basic economic decisions and the flows are coordinated, is the main stress of the next four units. Unit 15 provides you with general descriptions of three types of economic systems so that you may compare and contrast the ways in which different societies coordinate their economic activities. The emphasis in this unit is upon the general similarities and differences between economic systems.

I. First Situation: A Traditional Economy

Saxon Security

In the glow of the open fire Alaran's father held up the two gold coins for the whole family to see. "Look, everyone," he said, "This is what our precious Alaran traded for the linen cloth we sent him to trade when the Roman garrison took up its positions across the river. He gave the commander of the garrison all the cloth we had produced from the new crop of flax and received these, these...<u>ornaments</u> in return." He threw the words and the coins at Alaran and turned away in disgust. Alaran's grandfather, his elder brothers and even the womenfolk took turns at criticizing him for his trading venture. "We needed Roman swords and Roman wine, not gold disks with Roman chiefs on them," they reminded him. Why hadn't he followed the usual custom of trading the linen for useful materials, they asked.

As he walked away from the mud hut that was his home, Alaran fought back the tears of shame which were almost on his cheeks and began to wonder himself why indeed he had not traded goods for goods rather than for what the Romans called money. When he went into the garrison he knew that he carried not only the linen he had helped produce but the linen dozens of his relatives had helped produce, and now he had let them down by getting for all their common labor a few gold coins. He should have realized then that the coins couldn't possibly be shared with even his brothers never mind his cousins. That Saxon linen could have easily bought wine and other foodstuffs which his family needed or swords which they might have traded to their neighbors in return for meat and skins. He picked up some small stones and threw them at one of the village pigs rooting around the edge of the river. He began to realize that he had been thinking mainly of his own convenience in accepting the gold--it was so much easier to carry than swords or skins of wine. The thought scared him because he had always been taught to think of the family and community welfare rather than his own. Almost as if by instinct he pulled his woolen tunic tighter around his waist and turned his direction toward the Roman encampment just across the river. He'd do something to repair the damage done to his family and his own pride. He'd trade the gold pieces for some of the things his family needed.

Picking his way gingerly across the slippery rocks and among the driftwood he eventually clambered up on the other bank and headed for the Roman garrison. It was just about daybreak when he arrived, and he had to wait some time before the people known as merchants began to display their goods on wooden stands and to bargain with his fellow Saxons--trading cattle, wool, flax, salt and linen for Roman goods. Eventually he made his way back to his own village carrying on his shoulders a wicker basket containing four swords, two skins of wine and some loaves of Roman bread. The reception he received this time was in strong contrast to his last homecoming. Remarking that Alaran might turn out all right after all, his grandfather distributed the goods to those he felt needed them most. He kept two swords for himself saying that he planned to visit a neighboring village and wanted them for exchanging. He had just heard that swords were in demand there and horses were rather plentiful.

That night as Alaran drew his skin cloak around his shoulders and bit into a piece of roast pig he felt some pride in having maintained the family tradition.

At daybreak next day Alaran and his grandfather set out for the village one half a day's jorney from their own home. With them they carried some of the Roman bread, two swords and four beaver pelts. Grandfather Oric had last visited this particular village when Alaran was only a child, and it was with some difficulty that they decided on the best route to follow. Alaran found the meadow grass a pleasant relief from the rocky and muddy land surrounding his own home. During the journey Alaran asked Oric how many people he knew in the village they were headed for. "I don't know anyone," Oric replied. "Furthermore, I don't want to know anyone. Remember, my boy, beware of strangers."

"Why then are we making this journey?" asked Alaran.

"Well," chuckled his grandfather, "partly because I wanted to get away from those womenfolk for a while. I know I'm supposed to lead the family but I hate to have my opinion asked on every decision. Besides, we can use an extra horse to help with wood hauling before the snow comes."

Arriving at the village which was situated near the edge of dense forestland, Oric sought out the chief of the community and asked him about trading a horse. The village chief refused to commit himself until he saw the swords and beaver pelts. Even then he was undecided and called in some of his relatives and asked them if they wanted to dispose of one of their extra horses for the swords and pelts. After arguing back and forth they decided not to trade the horse. They needed it worse than they did the swords and besides they could eat the horse if the approaching winter was especially severe.

The single contact that Alaran had had with another Saxon village hadn't proved too fruitful and as he and his grandfather walked home, he wondered how long it would be before he would ever see another village again. His thoughts were interrupted by Oric mumbling something about "we don't need them and they don't need us. That's how it's meant to be."

II. Second Situation: The Emergence of a Market Economy

The Old York Fair - 1465

The oxen drawn cart lumbered slowly along the rut strewn roadway as Hugh of Norton urged the animals onward with an occasional sharp prod from a long stick and with guttural sounds which vaguely resembled English. His comments to the animals were a source of some amusement to his niece and nephew who sat behind him on the assorted bags and boxes stacked in the cart.

"What language is that you use in speaking to the oxen?" asked Walt after his uncle had given the oxen some new instructions. Hugh laughed and responded that he had bought the oxen at the last fair from a Lincolnshire farmer and that he had to speak to them in their native tongue. "You both know how difficult it is for a Lincolnshireman to understand a Yorkshireman, even if they are fellow countrymen." Just then they were overtaken by a man on horseback who wore clothes quite unlike the rough homespun cloth of Hugh and his two companions. The stranger slowed his pace to the speed of the wagon and asked Hugh the way to the York Fair. Pointing with his stick toward the hill they were approaching, Hugh told him to continue over the hill until he came to a newly constructed bridge. "After crossing the bridge and taking the road to the left you'll soon come in sight of the towers of York Minster," he added.

After the horseman had gone Hugh commented that he had never seen so many strangers in all his life. "That fellow seems to have come from foreign parts. With those fine clothes and the bulging leather bags tied to his saddle I'd say he is probably going to the fair to lend his money to the merchants. He'll make a pretty penny too in spite of all the preaching we hear against lending money for interest. It seems as if everyone is out to make as much for himself as he can."

The cart lurched and swayed as the oxen strained on the hill and Hugh, Walt, and his sister Meg had to walk until they reached the crest. Below them in the distance they could see a number of roads converging at the new bridge and four or five carts like their own lined up to pay the toll established by the local merchants. As Hugh paid the bridgekeeper the amount he remarked to Walt and Meg: "Two years ago I ruined most of my supplies when my cart overturned in this river. Paying a toll is a better bargain than soggy flour. It's easier than paying with a quarter sack of wool too!"

Once across the bridge they fell into line with other carts and horsemen heading for the city of York and its annual fair which would last for the next ten or twelve days. Occasionally they could hear above the rumble of wooden wheels and the slow shuffle of the oxen the songs and voices of foreign lands unknown to them. Walt tried to explain to Meg the little he knew of geography and where these foreigners might possible be from. The whole world seemed to be converging on York and as they passed some of the wagons which had drawn off the main road Walt and Meg tried to guess what goods they carried and the lands they had traveled from. The English carts were easily recognized; most of them held sacks of wool and barrels of

salted meat. Foreign carts were easily distinguished by the strange languages their drivers used and by the large boxes of brightly colored cloth with which the carts were laden. Some carts were filled with smaller highly decorated boxes and Hugh explained that some of the merchants carried with them supplies purchased in the lands which lay many months of travel to the east. "Some rich folk like to fancy up their meals with these spices and sugar," he said. "And the ladies are always looking for sweet smelling oils and perfumes. Speaking of smells--remind me to pick up some salt herring at the fair. There was a Dutch trader there last year who had the best we've ever bought. What would we do without the fair?"

Once at the fair Walt and Meg wandered freely among the various stalls of merchandise while their uncle attempted to sell the wool he had brought to the fair. At one stall an argument was in progress over a charge of cheating. The seller complained that he had not received a fair price for the flour he had just sold and called in one of the fair officers to decide the case. The buyer protested that he measured the flour with the newly recognized weights and had given the producer the price per pound recommended by the governors of the fair. "What more can he ask for?" cried the buyer. Walt and Meg moved on as the officer attempted to convince the miller that he wasn't being cheated.

Still another complaint was heard about the low price being offered for salted beef. One producer was telling his companions that he didn't see why the money he got should be decreased simply because there was more meat available. "Doesn't seem fair," he groaned. "I put as much work into this year's beef as I did last year and I'm getting less in return."

In another stall they overheard an English gentleman pleading with an Italian money lender for a loan so that he could purchase some more silk for his daughter's marriage and spices for his kitchen. The Italian was willing to lend the Englishman the money but now the two could not agree on the interest to be charged.

Meanwhile Hugh had succeeded in selling his wool and the few boxes of lead ore he had collected. In their place he now had a leather bag of gold and silver coins, some of which he used to purchase the sale herring, flour and other commodities needed on their isolated sheep farm.

The three travelers met by arrangement at the baker's stall and after purchasing meat pies and ale they set off on their return journey to Norton. The long period of English twilight saw them almost home. Along the way were the fires of numerous camps of unknown foreign and local merchants, a persistent reminder of the increasing contacts the English were having with their own countrymen and those from across the sea.

III. Third Situation: The Planned Economy

A Bonus for the Foreman

Anatole Sergeyev made his way through the crowd of workers streaming out of the Moskovitch automobile plant at Shadrinsk in the U.S.S.R. He was grateful

that today was Saturday and that tomorrow he would have a day off from his work as an assembly line foreman. He was anxious to get home too because he had just received notice that the assembely line section which he supervised had exceeded its quota of finished automobiles in the last month. This meant that he would have a bonus coming to him and he was eager to share the news of his good fortune with his wife Nina. As he walked quickly home he began to daydream about what he'd do with the extra money. Not that he hadn't thought about this before--ever since the quota for last month had been set and approved by the regional planning board in consultation with the chief administrator in Moscow, a bonus had been one of his main aims. Now that he had it, thoughts of some new clothes for himself and Nina or even a new Avangard television set ran through his head.

Nina was busy in the kitchen when she heard Anatole whistling as he entered their small two room apartment. "Well, what makes you so happy, Anatole Sergeyev," she asked. "Have you lost your job?"

"Oh, you know full well that I won't leave old Moskovitch until I have a better job. No, no--I haven't lost anything. I've just earned my first bonus and what a bonus it is. Almost 1000 rubles* because we exceeded our quota of finished cars. Imagine a one-third increase in my pay next month."

"Are you quite sure you'll get that much?" she asked him with a hint of skepticism in her voice. "You've had bonus promises before that never did come to anything."

"Of course I'm sure. Comrade Karmov, our plant union leader, announced it at our weekly meeting. He congratulated us all on doing so well, contributing to the growth of Mother Russia and all that stuff and then he announced that everyone in our section would receive a bonus. Afterwards he showed me the bonus schedule and I can tell you, it pays to be a foreman."

He grabbed Nina by the arms and tried to dance with her.

"Stop it--can't you see I'm trying to fix a meal," she laughed as he swept her around the kitchen. "In this mood you'll have that bonus spent before we get it."

"We'll eat out," he cried. "We'll buy some new clothes, a television, a new samovar, a...."

His wife interrupted him. "We could save it," she suggested.

Reluctantly Anatole agreed that that was a possibility.

Later on as they ate their evening meal they talked more about their windfall and both agreed that winter clothing was probably the best use to which they could put the money, so before the state clothing store closed

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*Ten rubles - 1 U.S. dollar.

for the weekend they paid it a visit and looked over the selection of coats and hats and fur lined boots.

The saleswoman asked what they would like to buy. Anatole with some pride said he was interested in buying a winter coat and his wife needed some boots. "That's our reward for exceeding our production quota at the plant," he said, adding that they just wanted to look around and would buy next week.

When Anatole told the saleswoman their sizes she shook her head and said, "I'm sorry, but we do not have those sizes. We received our quota of this year's coats and boots just yesterday and the few in the sizes you want were sold this morning. We didn't get the quota we expected. Apparently the coat and boot makers are not even meeting the quota set for them. Maybe you should go into the clothing plants Comrade Sergeyev, they need to exceed their quotas there."

Nina added with a sigh, "If the officials on the planning boards only knew exactly how many would be needed...but, I suppose they do the best they can."

As they left the store Anatole remarked that first things must come first. "The army must use up much of the coat production and who can begrudge a soldier a warm coat," he said as he looked wistfully at the rack of coats which were all too small for him.

Passing the state-operated radio and television store they stopped to admire the latest Rubin model which sold for 2600 rubles. This model cost 800 rubles more than the least expensive model but with the money they had already saved and the bonus money, they felt that they could afford the better set. They inquired of the manager about the possibilities of their buying a Rubin and were told that he had received his quota for the year but that he still had two which had not been sold. "If you want one, though, you'll have to act fast," he added.

As they walked home Anatole and Nina stopped by the "free market" where they bargained with an old woman for a sack of apples and a string of mushrooms.

"Apparently there are no quotas on apples and mushrooms," Anatole commented as he bit into an apple. "It's strange that the peasants are able to guess how many apples will be called for better than the central planning board can figure how many television sets will be called for."

"Now, Anatole Sergeyev," countered Nina, "Don't you be getting so critical. After all the planning boards are only human and what they do is for the benefit of our whole nation. Besides, producing apples and mushrooms isn't quite like making television sets or coats and boots."

They continued talking about what they might do with the bonus money, with Anatole complaining now and again that it didn't seem fair for the government to give him a bonus and then fail to provide enough goods for him to spend it on.

Nearing their apartment, Nina said they could possibly save it and eventually buy a car.

Anatole looked at her quizzically, opened the door for her and muttered a disgusted "Huh! I'd be gray by then." Her suggestion didn't seem to impress him in the least.

Unit 16: Basic Economic Decisions in Market and Planned Economies

In Unit 15 we defined and discussed the general similarities and differences in economic systems, that is, in the way economic activity is coordinated. Now, in this unit, we will be more specific. The focus will be placed upon the way the decisions are made in a market economy as contrasted with the way these decisions are generally made in a planned economy. Since, in a planned economy planning is a major responsibility of government, it will be considered in more detail in Unit 17, the Economic Role of Government. We have already dealt indirectly with coordination when we discussed each of the decisions. Now we may treat the relation of decisions and coordination with more precision and detail.

I. First Situation: The Variety of Market Supply Situations

This situation will be covered entirely by classroom discussion.

II. Second Situation: Market Variety

A. the following chart is an attempt to categorize four main degrees of competition and to indicate the varying consequences and resulting policies:

Type of Market	1 No. of Firms	2 Degree of Competition	3 Conditions of Entry	4 Type of Product	Examples
Pure and perfect competition	Very many	Very large number of competitors	Very easy	All the same	
Monopolistic and imperfect competition	Many	Considerable number of competitors	Easy	Different varieties	
Oligopoly	Few	Few competitors	Difficult	Some the same--some varied	
Monopoly	One	No competitors	Unlikely	Unique	

B. Reading across the chart you can get an approximate definition of each of the market types.

The following questions may assist you in filling in the example section of the above chart:

Where and why, for example, would you place the suppliers of:

1. your breakfast--eggs, cereal, milk?
2. the telephone service and electric light?
3. shoes and clothing?
4. automobiles?
5. home appliances?
6. banking services?
7. gasoline?

III. Third Situation: Comparing Decisions in Two Economic Systems

The sentences on the following page are descriptive of the role of markets in either a market or a planned economy. Sort them according to:

A. those that describe the decisions in a market oriented economy

B. those that describe decisions in a plan oriented economy

(1) Goods and services are distributed primarily according to the ability and willingness of the buyers to pay.	(7) The sources of funds for investment (capital) come mainly from taxes.
(2) Resources are distributed primarily by competitive bidding among producers.	(8) Competition among producers, stimulated by the desire for profit, motivates producers to keep their costs as low as possible in order to appeal to consumers.
(3) The use to which resources are put is determined by the goals set for society.	(9) The source of funds for investment (capital) is mainly private savings.
(4) Signals are sent through chains of markets indicating the pattern of consumer choices.	(10) The motivation for increased productivity is the desire to reach output goals rather than making the largest possible profit.
(5) A significant amount of goods and services are distributed on the basis of sharing.	(11) The use to which resources are put is determined by the desire for profit.
(6) The use of resources is determined by means other than bidding among producers.	(12) Consumers have choices in the market, but their choices do not act as signals in determining what will be produced.

The above sorting should give you one means of comparing the two systems. A more precise comparison may now be made by relating those sentences in the market category to the appropriate economic decision. The same should now be done for those sentences in the planned category.

As an aid in categorizing the sentences according to economic decision, ask yourself: Which sentences, descriptive of the market and planned economies, are related to the economic decision "What to Produce?" and so on through the four basic decisions.

Below is one way in which you may organize your sentences. Make sure you know why you placed each sentence where you did.

Economic System / Economic Decision	Market	Planned
What to Produce		
Allocating Resources		
Stimulating Efficiency		
Distribution of Goods and Services		

SCARCITY (Units 1-6)

FLOWS (Units 7-14)

COORDINATION (Units 15-18)

UNFOLDING THE CONCEPT OF COORDINATION

Unit 15

Types of Economic Systems

Characteristics of:
- Traditional economy
- Market economy
- Planned economy

Similarities and Differences:
- Supply
- Demand
- Role of markets
- Role of planning
- Firm

Unit 16

Basic Economic Decisions
Market and Planned Economies

Structure of Markets under Capitalism

	Market Economy	Planned Economy
Basic Economic Decisions		

Unit 17

Economy and Government

Economic Role of Government (Capitalism today)

Markets (Decision-making machinery)
Planning

Flows (Stability, Growth, Equity)

Economic Role of Government (Communism; socialism)

Unit 18

Economic Problems and Policies

Economic analysis and definition of problems

Economic problems and coordination

Illustrative exercises:
- Farm
- Monopoly
- Security and Poverty

Unit 17: Economy and Government

In Unit 16 we focused our attention upon the way decisions are made in a market economy as contrasted with the way these are generally made in a planned economy. This unit will attempt to investigate the role of government as a coordinator of economic activities in both market and planned economies.

I. First Situation: The Role of Government in a Market Economy

After examining the following list, how would you answer the question: What role does government play in the operations of a market economy?

1. Interstate Commerce Commission
2. Federal Trade Commission
3. Pure Food and Drug Act
4. Securities and Exchange Commission
5. Federal Reserve Act
6. Federal Deposit Insurance Corporation
7. Economic Opportunity Act
8. Labor Management Relations Act
9. Fair Labor Standards Act
10. Social Insurance Acts

II. Second Situation: The Role of Government in a Planned Economy

A Meeting in the Cafeteria in
the Tower of Babel

Once upon a time--we must begin this way, for it is not likely that an American student and a Russian student could meet each other, overcome the language barrier, and speak as easily and as freely as we overheard them talk. But if they could meet and discuss the economic roles of their governments, this is what they would probably say. So let's pretend it happened! By the way, they've been talking about other things, but as we moved our chairs nearer, we heard our American student say--

John: I know you have a choice when you go to your stores to buy, but somebody else told the stores what they would have to sell.

Ivan: Of course, what's so strange about that?

John: What's so strange? In my country, stores listen to their customers and the customers tell them what they should have on their shelves.

Ivan: Well, I think our way makes more sense. The Party knows what is best for us and they work up a plan which tells us what we should produce and sell.

John: They work up a plan--what do you mean by that?

Ivan: It's really very simple. The Party knows better than the people how our scarce resources should be used. They have some people whose job it is to plan, called the Gosplan. Of course, the Party gives them the figures they should use, e.g. how much should go for consumers and how much for factories and that kind of thing.

John: So you believe the Party knows best and just tells you what to do.

Ivan: No, the Party is wise enough to send the Plan to the people who are going to make the goods and ask them to review and criticize it.

John: Yes, but those who do review it are probably members of the Party and only 4% belong to the Party. And what about the consumers--do they get a chance to review the Plan?

Ivan: Well, just as in your country, they don't have to buy the consumer goods if they don't like them.

John: That's really not the point. The question is, "Do the consumers have any real say?"

Ivan: I think they do because the Party has ways of knowing what consumers think and need.

John: But once the Plan is reviewed, whatever that means, the Party still administers the Plan.

Ivan: Of course, who else would you expect to run the country? The government has ministers that run various branches of industry, trade, and agriculture. You have a postmaster general who runs your post offices.

John: But that is only one service. In my country, the government doesn't run everything.

Ivan: They don't in Russia either. The people on the collective farms can sell some of their products in a market.

John: I know, but selling freely in the market place is not typical in your country, and only a small part goes on that way.

Ivan: That's right, but we are allowing more choices in buying and selling. We believe in planning and that letting producers make some choices is only a way to make planning work better.

John: Then you don't really plan and control everything you do. I know you are always revising your plans.

Ivan: Of course, the Party often has to change its plans, depending on conditions. Sometimes we decide to administer the plans through regional councils, but recently the Party decided that more central control was needed.

John: Do you realize how many times you say "the Party"? I wonder if you realize how different your way of thinking is than ours. We see the producers and consumers deciding what shall be made and sold. The government steps in only when necessary. But in your country, the Party really runs the economy and makes all of the basic decisions.

Ivan: And you think that's wrong. What's wrong about it? After all, the Party. . . .

The great differences between John's way of thinking and Ivan's broke the spell of their conversation.

III. Third Situation: Social Expenditures

The following table is reproduced as an aid in making comparisons between social expenditures in the U. S. and eight selected European nations:

Social Security Expenditures of Common Market Countries, Sweden, the United Kingdom, and the United States, as Percent of National Income, by Major Types of Coverage, 1962

Country	Total	[1]OASDI	Sickness and maternity insurance	Unemployment insurance	Work accident insurance	Family allowances
Belgium	13.4	4.7	3.6	1.1	1.0	3.0
France	13.4	3.9	4.1	0	1.1	4.3
Germany (Federal Republic)	14.4	8.1	4.5	.4	.8	.6
Italy	12.0	4.7	2.9	.6	.6	2.9
Luxembourg	13.7	6.3	3.1	0	1.8	2.5
Netherlands	12.0	5.7	3.6	.6	.4	1.7
Sweden	9.2	5.1	2.2	.2	.2	1.6
United Kingdom	10.6	4.2	5.1	.3	.3	.6
United States	4.8	3.6	.1	.7	.3	---

Source: Paper No. 7, European Social Security Systems (Washington, D. C.: U. S. Government Printing Office, 1965), p.11.

[1]Old-age, Survivors, and Disability Insurance

Unit 18: Economic Problems and Policies

In the preceding seventeen units you have been concerned with economic analysis. In this concluding unit you will be introduced to some of the ways in which this analysis may be applied to the resolution of economic "problems" created by a breakdown in economic coordination. The three "problems" are those related to agriculture, monopoly and poverty. In each instance your task is to use economic analysis to define the problems and to suggest alternative choices of policies which may be used to resolve them.

I. First Situation: Agriculture--"Problems" and Policies

The following account will serve as a basis for analyzing a present-day problem with the tools of economic analysis provided in the previous units.

Agricultural Abundance

There is a lovely song to America that refers to our "amber waves of grain," and our "fruited plain". We respond to it with nostalgic pride. Indeed, most of us have seen in the countryside field after field of hearty crops and livestock, dotted with occasional barns and small round storage bins which upon closer inspection are securely locked.

Let us now unlatch the gate to some imaginary farm that might exist near your city or your school so that we might look more closely at the economic enterprise of farming, and evaluate the condition of American agriculture.

A white picket fence surrounds the farm house, and as we swing open its gate, we remember that our purpose is to see the farm in terms of its economic role. To do this we need to have some facts. About 6% of the employed work on farms and about 3% of the Gross National Product is spent for the goods that farmers supply--food and the fibers for clothing.

Looking beyond the farm house that we are visiting, there are tractors and equipment that have made farming more efficient. The fields of wheat and corn reflect the hearty hybrid that research has made possible. Crops are taller and yields are greater than ever before. This brings to mind the fact that, on the average, one farmer can provide enough food to supply 26 people! How efficient! What could be more appropriate in our land of increasing-production and growth! This is fine <u>if</u> the demand by consumers for food is growing in proportion to the supply produced by the farmer. But it isn't. We don't need to buy that much more food. We are a well-fed nation, and as incomes increase, a smaller percentage of it goes for food.

Meanwhile, the farmer has his fixed costs for tractors, barns, seed, home, and other needs. Whether his crop is helped by fair weather, or destroyed by locusts, his costs of production are relatively fixed. His machines make production more efficient in the long run, so the food supply increases. However, consumer demand for food remains about the same. What would this

situation do to the price of farm commodities? How would this condition then affect the allocation of resources that are used to produce food and fiber in the agricultural sector of our economy?

Now, if you had used your tools of economic analysis, you may conclude that an excessive amount of the factors of production have been used in agriculture, and would thus be reallocated to industry.

But look at the facts: 1. What percentage of our labor force is engaged in farming? 2. What percentage of our Gross National Product goes for food and clothing? 3. How many people can be supplied by each farmer?

Now ask yourself: 1. Is there an economic problem? 2. Has the market place adjusted the resources used for agriculture by price signals? 3. If adjustment through the market mechanism had taken place, about what percentage of the labor force would be engaged in farming?

Coming back to our farm visit, let's try to see the economic consequences of being a modern machine-oriented efficient farmer.

For example: 1,000 bushels of wheat are harvested. The farmer wants to see his wheat at a price that will cover his fixed costs and provide income to maintain his standard of living. But when he takes his bushels of wheat to market, he finds other farmers, equally efficient. How can he compete with them? Is his product better than theirs? No, the product is almost identical, so his crops must be a part of the total supply. The abundance of supply drives the price of wheat down. Thus, without price supports, the "poor" farmer would be <u>really</u> poor! That is, his income could be appallingly low. It would be a crisis! He could leave this industry, and move to the city where his work may provide a better income. But he doesn't! You see, he loves the wholesomeness of rural living and the satisfaction of working the land. He does not have or want other skills. He probably will stay, as many farmers have stayed.

What do you think economic policy in agriculture should be? Use your economic reasoning and the facts you have gathered from this account and other materials. Then compare your solution with policies that the government has tried.

References for further reading:

Hathaway, Dale E. <u>Problems of Progress in the Agricultural Economy</u>. Chicago, Illinois: Scott, Foresman & Co., 1964.

McConnell, Campbell R. <u>Economics: Principles, Problems and Policies</u>. 2nd ed. New York: McGraw-Hill Book Co., Inc., 1963, pp. 606-626.

II. Second Situation: Monopoly

A. The following account will serve as a basis for analyzing the monopoly problem with the tools of analysis provided in the previous

units. The story of the growth of monopoly, already familiar to you in your history courses, will enable you to take another look at monopoly and with deeper insights contemplate the choices of policies with regard to the present-day monopoly problem.

So Big

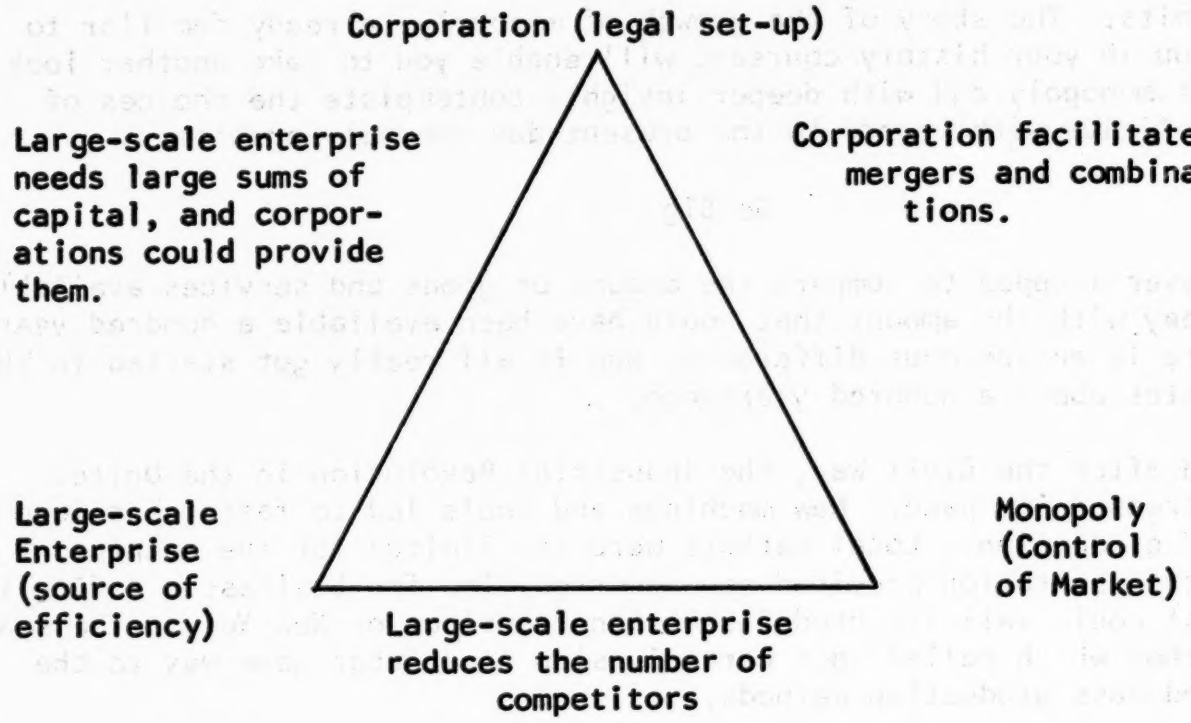
Have you ever stopped to compare the amount of goods and services available to you today with the amount that would have been available a hundred years ago? There is an enormous difference, and it all really got started in the United States about a hundred years ago.

Before and after the Civil War, the Industrial Revolution in the United States increased its pace. New machines and tools led to faster and more mechanized production. Local markets were too limited for the machine. Improved transportation provided new opportunities for business. A firm in the Midwest could sell its products in San Francisco or New York. The small home workshop which relied upon careful, slow hand labor gave way to the factory and mass production methods.

You know about the inventions of Eli Whitney, Alexander Graham Bell, Thomas Edison, but there were a host of others. There were also those who were on the frontiers of business expansion because of their industrial leadership (e.g. Henry Ford) and financial leadership (e.g. J. P. Morgan and John D. Rockefeller). Advances in technology and abundance of resources and drive brought new dimension to American life. But not without its problems!

"Bigness", as we know it today, provides us with the highest "standard of living" in the world. But let us think about it. How are bigness and standard of living related? What factors caused our economy to grow? What economic tools do we need to analyze and measure our economic growth? How do we benefit from large-scale enterprise?

Now, the gains from large-scale enterprise have to be weighed against another closely allied development--growth of monopoly. What prompted the growth of monopoly? There are three major reasons, all of them related to each other, and illustrated from the following diagram:


Corporation (legal set-up)
Large-scale enterprise needs large sums of capital, and corporations could provide them.
Corporation facilitated mergers and combinations.
Large-scale Enterprise (source of efficiency)
Monopoly (Control of Market)
Large-scale enterprise reduces the number of competitors

As the diagram indicates, large-scale enterprise may reduce the costs per unit, but it may also reduce the number of competitors. The corporation provided the capital but also facilitated the growth of monopoly. Now, with this help, think again of the history of the United States prior to the Civil War and afterwards. Review the growth of railroads and other forms of transportation, the immigration of skilled workers, and the continuous uncovering of America's resources. Remember that the giant corporations did not suddenly appear. They evolved from simpler types of business organizations, e.g. individual proprietorships and partnerships. But for the reasons indicated, corporations made possible both large amounts of capital and control of the market. Finally, as it became clear to the American people that they must try to handle this complicated problem, the economic role of government with regard to monopoly increased.

Drawing on illustrations from American History, let us ask ourselves some important questions about monopoly in the United States and then use these questions and answers to help us with the analysis of monopoly today and possible policies for handling the problem.

1. How did we know that the problem of monopoly existed and that it exists today?

   Clues:

   Scarcity and the satisfaction of wants.
   Lower per unit costs and control of quantity produced.
   Lower per unit costs and possibly higher monopoly prices.

2. What is the monopoly problem?

   Clues:

   Lower per units costs from large-scale enterprise in conflict with monopoly control of the market.
   Limitation on the consumer's ability to influence the use of resources.
   Great power in the hands of those who through monopoly control the use of resources.

3. Nature and extent of the breakdown of coordination

   Clues:

   Forces in economic life which tend to reduce competition.
   Products that possibly could not be produced as cheaply if we had many small producers.

4. Policies for handling monopoly

   Clues:

   The help from Units 1 through 17 in understanding the monopoly problem.
   The different perspective one gets in studying American History with economic understanding.
   Policies which might have been possible if people knew earlier what we now know about economics.
   Policies of government inhibiting or promoting monopoly.

B. Government Policy

A major purpose of governmental intervention in business has been the maintenance of competition. Our system rests upon the notion of free markets and competition. Monopolistic giants appear to threaten this belief. The policies of the government have sometimes promoted and sometimes restrained monopoly.

The relationship of government and business is enormously complex. Students may find up-to-date news items to document the ambivalance of government and business toward one another. But the most striking fact is that government and business are so overlapping and interdependent that a price rise, or a production increase, or some sudden economic adjustment immediately precipitates reactions from the President and the Congress.

The following charts may be used to summarize some of the major landmarks of governmental policy relative to the monopoly problem. The first item in each chart has been completed as an example. You may refer to a standard U. S. History text for information needed to complete the chart. Other specific aids include:

Caves, Richard. American Industry: Structure, Conduct, Performance. New Jersey: Prentice-Hall, 1965.

McConnell, Campbell R. Economics: Principles, Problems and Policies. New York: McGraw-Hill, 1963.

Chart I: Legislation Designed to Promote Private Monopoly for Public Benefit

Policy	Purpose	Brief Definition	Effect
Patent Laws, 1790	Incentive to new products, invention	Gives 17 years protection to make and sell product	Barrier to entry of new firms; encourages monopoly by 17 year protection and entrenchment
Interstate Commerce Act, 1887			
Emergency suspensions of anti-trust legislation			

Chart II: Legislation Designed to Inhibit Monopoly Growth and Preserve Competition

Policy	Purpose	Brief Definition	Effect
Sherman Anti-Trust Act, 1890	Maintain competition	Made monopoly & "restraint of trade" illegal	Court interpretations weakened enforcement
Clayton Act, 1914			
Federal Trade Commission Act, 1914			
Robinson-Patman Act, 1936			
Celler-Kefauver Anti-Merger Act, 1950			

Chart III: Other Instances of Government Action Relative to the Monopoly Problem

Policy	Purpose	Brief Definition	Effect
Government Defense Contracts	To provide for national security	Business agreements between U. S. Government and private industry	Public expenditures now account for at least 20% of Gross National Product
Protective Tariffs			
Depletion Allowances, Tax policy			
Standard Oil Trust Case, 1911			
Electrical Equipment Case, 1961			

III. Third Situation: Poverty and Insecurity

A. In this third example of a problem area, a more formal process of investigation than was used in the first two examples is illustrated. There are two equally important aspects of this learning situation. First, the presentation of a body of facts related to income distribution and economic insecurity in the United States. Second, the process of collecting, organizing and presenting these facts in a systematic manner. The phrase in a systematic manner is the key to understanding the main objective of this learning situation. Many books have been written on the process of scientific investigation in the social sciences; implicitly or explicitly each contains an outline of that process. We present a model not the model of the process. Students (we are all students in the sense intended here) who become involved with the process of scientific investigation will probably develop their own outline of the process. The outline presented below is a theme on which many variations can be written - it is not a rigid series of steps to be slavishly followed.

B. One Model for Scientific Investigation in Economics

1. Statement of the Problem

a. The values held by a society set the objectives of the economic coordination.

b. A full understanding of the problem includes a specific identification of the nature and extent of the breakdown in coordination. In what way does economic analysis help us to see the breakdowns in coordination?

2. Previous "Solutions" of the Problem

a. What historic or contemporary policies have attempted a resolution of the problem?

b. What kinds of evidence lead you to support or reject previous policies?

3. Constructing New Alternatives

a. What modifications in previous policies would you suggest?

b. Would you suggest an essentially new policy?

4. Evaluation of New Alternatives

a. What kinds of evidence will lead you to support or reject the new alternatives?

b. What new measurement techniques are needed to test these new alternatives? (e.g. Perhaps, existing collections of information do not yield the kinds of data needed to test the new alternatives. How would you go about collecting the information you need to test your hypotheses?)

C. Read the following and attempt to answer the question: What is the poverty problem in the United States?

The New Poverty[1]

When the country was young, a man's standard of living depended in large measure on his skill, initiative, strength and wisdom. With his "good right arm" he wrested a living for himself and his family from forest, field and stream.

The attitude prevailed that poverty was "God's judgment against the undeserving." Poor people consoled themselves with the thought that riches would come if only they made themselves more deserving - if only they were able to work harder and develop more wisdom. Although most people were poor and remained so, they had hope. They also had Mother Nature to provide them with fish and game, free for the taking.

Then the virgin woodland was cut down and in its place sprouted a thicket of smoking factories. Before long a man's standard of living came to depend, not only on his skill, initiative, strength and wisdom, but also on an incredibly intricate mechanism of assembly lines, offices and stores to provide him with the opportunity to work.

Although the American economy made great strides, progress was not steady. A crisis occurred in the 1930s and strong right arms by the millions were reduced to reaching for doles of thick bread and thin soup. Workers, who had lost the ability to achieve economic security by individual action, sought it collectively through large unions and strong governments. Programs such as Social Security, Unemployment Compensation, relief and public welfare helped many escape the hobnailed heel of want. The continuation of such governmental activities is thought by many to be one reason why we have avoided major depressions and improved the lot of the poor over the last 20 years.

Another reason, perhaps more important, is the technological revolution that was nourished so effectively by World War II. New methods and machines have increased the productivity of American workers tremendously in the space of a few decades. Able to produce more, most of us have been able to buy more and the general standard of living has risen to a level that our grandfathers never even dreamed of.

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[1] The New Poverty. Series for Economic Education, published by the Federal Reserve Bank of Philadelphia, September, 1964.

Living With Change

It's ironic, but the technological revolution which opened the door to prosperity for the majority, also slammed that door tight shut in the face of a sizeable minority. The essence of the revolution is change - accelerating and pervasive change. Not only has the way we produce goods in our factories undergone sweeping change but so has the way we sell groceries, teach school, heal the sick, and raise crops, to give but a few illustrations.

As the revolution progressed, some workers were not able to keep pace with change. Maybe they were too old or too set in their ways, maybe they ranked low in mentality or had been denied an adequate education. For one reason or another they lacked the inherent flexibility to adjust to the fast changing conditions in the labor market. As a result, the wave of affluence began to sweep by leaving them and their families in eddies of poverty.

The Disadvantaged

The "new poverty" of the postwar period usually struck people who were at some disadvantage. Negroes, for example, were especially hard hit. One reason was that they were afflicted by the disadvantage of discrimination, which often denied them the opportunity for a good education and job training.

Another disadvantage is the lack of a male breadwinner. According to the definition used by the President's Council of Economic Advisors (see below), about 50 per cent of broken families are poor compared to 20 per cent of all families. The mother, who suddenly is forced to support her family, probably lacks the skill necessary for a high paying job and she also may encounter some salary discrimination against women.

One out of every two families headed by a person 65 or older, is poor, as defined by income alone. A major disadvantage here is being old at a time when employers seem to put a high premium on youth. To make matters worse, many people, now retired, were at the peak of their earning power during the Depression and probably missed the opportunity to build up a normal nest egg.

Over 45 per cent of all farm families are poor. Among their disadvantages is the rapid increase in agricultural productivity which has made it extremely difficult for the small farm to compete with the large business-like endeavor. Although many poor farmers have given up and gone to the city, many others still continue to eke out an existence on a few barren acres.

About a third of the people who live in the Appalachian highlands are poor. One of their principal disadvantages is the decline in mining employment, which came about as coal users changed to other fuels.

We do not mean to give the impression that all the causes of the new poverty are beyond the control of the individual. (Some are racial discrimination, for instance.) But a disadvantage such as inadequate education often is the result of a voluntary, if misguided, dropout from school. Many old people may be poor because they squandered large incomes unwisely in younger days. Others may endure poverty because, for many understandable personal reasons, they find it difficult to break deeprooted ties to a depressed town or area.

The Quicksand Effect

As the post-World War II period progressed, people who sank in the quagmire of poverty found it increasingly hard to get out. The technological revolution was eliminating many of the manual jobs that once were the first rung on the ladder up to comfortable, middle-class living. Those unskilled tasks that remained rated low wages and low prestige. Thus, it became harder and harder to escape poverty.

The poor felt trapped by forces they didn't understand. No longer did they believe affluence was obtainable if only they worked harder and developed more wisdom. They tended to become discouraged and demoralized; they lost the hope which had made low living standards more bearable for their forefathers. Without hope, many were unable to take the first difficult steps of self-improvement that led out of their particular poverty pocket.

As time went on and the majority of the nation enjoyed its postwar prosperity, the poor became increasingly isolated from the mainstream of American life. They led shadowy lives in the slums so near but yet so far from the city's business heartland. They huddled in tarpaper shacks over the hill and out of sight from the turnpike that took happy suburban families to their mountain vacations. As Michael Harrington said in his book, "The Other America," poverty existed in an "invisible land."

How Much Poverty?

There is no way in the world to say with certainty that one family is poor and another is not. Poverty is both relative and subjective. It depends on many things including family size, age, assets held, climate, consumer price levels, the opportunity to grow food and so on. A retired couple owning a small farm in the South might feel well-to-do on an income that would mean extreme privation for a Philadelphia family with five small children.

The period in history makes a difference, too, because we are constantly upgrading our definitions of poverty. People who are considered poor today might have qualified as almost-affluent 50 to 100 years ago.

Poverty means something quite different in other parts of the world. By American income standards 75 per cent of all families in England might be classified as poor. Indeed, many nations in Africa and Asia would be delighted if they could raise their <u>average</u> standard of living to that of our poorest people.

Acknowledging the difficulties involved, the President's Council of Economic Advisors has made an attempt to define poverty in terms of monetary income. As a rule of thumb, the Council considers a family poor if it has a before-tax annual income of $3,000 or less, at the 1962 price level. An individual living alone would be poor with $1,500 or less.

Using these admittedly imprecise standards, about one-fifth of our population, or between 33 and 35 million people, is poor today. With adjustment for changes in the cost of living, about a third of the nation was poor in 1950.

Out of the Shadows

Harrington's "The Other America" was published in 1962. Since then the new poverty, if not the poor themselves, has become highly visible and, with the help of the mass media, virtually impossible to forget.

A number of factors combined in the last year or two to draw the nation's attention to its poverty. Harrington's book played a part in the awakening and so did other books, articles and speeches. In addition:

- Underdeveloped nations in Africa and Asia have recently received increasing publicity because of their birth pains and the heightening controversy over our foreign aid programs. Possibly better knowledge of poverty abroad has caused us to notice it more at home.

- Poor people are becoming a more important political force as traditionally poor minority groups begin to flex their voting muscles. In addition, reapportionment should give urban slum dwellers more political representation, at least in state legislatures.

- Because of its prevalence among Negroes, poverty is bound up with the civil rights issue. The spotlight on the latter undoubtedly has helped illuminate the former and vice versa.

- As the nation has grown more sophisticated in the matters of business and finance, the economic costs of poverty became more widely known. Not only does poverty mean a waste of potentially productive human resources but it places a heavy monetary burden on our various governments. As a nation, we have long since decided that we can't let people starve, so society undertakes to provide some sort of basic subsistence for our poor people. Furthermore, the country as a whole must pay huge sums to combat the unusually high rates of crime, disease and delinquency that poverty breeds.

- Some of the recent concern over poverty could have been caused by a developing guilty conscience on the part of the affluent majority. In the latter 1950s, critics intensified their complaints about American materialism, as epitomized by the automobile tail fins and other goodies. As in prior periods, this criticism didn't seem to diminish the national desire for material possessions, but it might have sharpened our concern for the less fortunate.

> Finally, the nature of the new poverty seems to have attracted widespread attention to itself, once it was illuminated. Thinking citizens have become alarmed at its pernicious effect. Many children growing up in the demoralized environment of our rural and urban slums, soon abandon hope as their parents did before them. This makes it extremely difficult for young people to do what is necessary to escape - to stay in school, for instance. Thus generation after generation may be doomed to live out their lives in poverty. Although the physical health and sartorial appearance of the poor has improved steadily, their mental attitude seems to deteriorate with each turn of this vicious, self-generating cycle. As a result, the poor fifth tends to become a greater danger to the comfortable four-fifths of the nation. Already the bitter fruits of the new poverty are alarming Government officials and private citizens alike. Juvenile delinquency, crimes of violence, riots and other disorders, often linked with poverty are on the increase. More important is the way the poor might wield their increasing political power. Are they likely to continue to support an economic and political system that they feel gives them little chance, or will they fall for the siren songs of those who would destroy democracy?

For reasons such as these, the new poverty has attracted the attention and concern of the nation. In the space of a few years it has become a major economic, social and political issue. Most people now admit something should be done to combat poverty and all its dangerous side affects. They agree with the great physician, Moses Ben Maimon, who said in the Twelfth Century-A.D.:

> "Anticipate charity by preventing poverty; assist the reduced fellowman, either by a considerable gift, or a sum of money, or by teaching him a trade, or by putting him in the way of business, so that he may earn an honest livelihood, and not be forced to the dreadful alternative of holding out his hand for charity."

Action - But What Action?

Some analysts hold that governmental "interference" has slowed the expansion of the private economy. Reduce this interference, they say, and the economy will grow faster, thereby creating more jobs for the poor.

On the opposite side of the fence, it is claimed that the new poverty is such a complex problem that only a strong central government can cope with it. This group splits when it comes to specific action, however. One school believes that the Federal Government should spend more or cut taxes in order to increase the overall demand for goods and services. This extra demand, in turn, is supposed to create new jobs for unemployed workers.

The other school says that the real problem is that modern technology has eliminated forever many of the jobs for which poor people can qualify. These analysts call for more specific governmental action, aimed directly at the causes of poverty. They believe Government should help unemployed workers qualify for the jobs that are available. Included in this category

are beefed-up training and retraining programs, better nationwide information on job opportunities, allowances for workers willing to move to other areas, an efficient system for trading-in used housing and anti-discrimination laws. Although sometimes thought to be necessary palliatives rather than lasting cures, such programs as unemployment compensation and aid to depressed areas generally are considered specific actions.

Then there are those who advocate both government action to increase overall demand and specific programs as well.

There Is No Free Lunch

Desirable as it might be to eradicate poverty once and forever, all the proposals commonly put forth involve heavy costs and serious risks. And, as we indicated earlier, so does doing nothing at all.

If the nation decides that reducing governmental "interference" is the best course of action, the risk is that the private economy may not respond as hoped. In fact, many experts believe that sharply reduced governmental spending could cause the nation to crumble into a depression like the one in the early 1930s.

Federal Government spending, abetted by Federal Reserve action to keep credit cheap, probably could pump up overall demand enough to create a job for almost every worker, no matter how unskilled or inflexible. Massive federal purchases of munitions in World War II required the services of virtually everybody including "the lame, the halt, and the blind." The risk, of course, is that such an infusion of demand today would leave a legacy of inflation as it did after World War II. Inflation can dislocate the entire economy, hurting poor people in particular, because they have relatively little bargaining strength in regard to wages.

Specific governmental programs, if well-conceived and executed, might strike effectively at the causes of the New Poverty. Their cost, however, could be a reduction of individual freedom and private initiative. Some European nations, which have all but eliminated poverty, have found that their programs are not very effective if participation is voluntary. As the Harvard Business Review points out ". . . some freedoms may be more important in the long run than freedom from want on the part of every individual . . ."

Conclusion

It goes without saying that a prosperous, growing economy is essential to the reduction of poverty. It is clear, too, that in some areas specific measures can be helpful. Indeed, the nation is already committed to full employment policies and numerous anti-poverty programs. The next steps, if any, depend on the careful balancing of goals and risks by an informed electorate and its representatives.

Suggested readings on the problem of poverty:

Bremner, Robert H. "Poverty in Perspective," in Change and Continuity in Twentieth-Century America. Edited by John Braeman, Robert H. Bremner, and Everett Walters. Columbus, Ohio: The Ohio State University, 1962, pp. 263-280.

_____. From the Depths: The Discovery of Poverty in the United States. New York: New York University Press, 1956.

Gordon, Margaret S. (ed.) Poverty in America. San Francisco, California: Chandler Publishing Co., 1965.

Harrington, Michael. The Other America: Poverty in the United States. Penguin Special (paperback). New York: Mac-Millian, 1964.

Schonfield, Andrew. The Attack on World Poverty. Vintage (paperback), 1962.

Current issues of the Economic Report of the President and the Council of Economic Advisors, and The Manpower Report.

CHAPTER IV

EVALUATION OF THE COURSE

Perspective on Evaluation

Tasks of Evaluation

A conventional view of educational evaluation is that its proper task is to determine the extent to which the desired changes in students have taken place. This task was accepted as an important one in this project, but by no means the only one. This older view did not seem to give adequate attention to another important task--namely, that of relating the changes to antecedent conditions. Consequently, it was assumed that evaluation should go beyond description of outcomes and attempt to explain them on the basis of the conditions that produced them.[1] A discipline-centered course also seemed to place its own special demands upon evaluation, as will shortly be explained. Thus, evaluation was considered to involve a number of basic tasks and, further, not to be confined to empirical or statistical operations.

It was found helpful to view evaluation as a series of operations to check certain assumptions inherent in the project. These assumptions seemed to fall under four main headings: Economics as a

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[1]E. J. Furst, "Tasks of Evaluation in an Experimental Course," Curriculum Development and Evaluation in English and Social Studies, edited by E. R. Steinberg and others (Pittsburgh: Carnegie Institute of Technology, 1964), pp. 133-139.

discipline, Appropriateness of course materials, Adequacy of teaching, and Effectiveness of course. These assumptions which are interrelated, will now be reviewed in turn.

Economics as a discipline. Basic to any course which purports to be discipline-centered is the assumption that it is indeed so--that it has a logic of its own, an inner structure. The formulation for this course did embody the working concepts of economists but represented one economist's views as to that logic or inner structure. Therefore it would be necessary to try to validate this formulation. Primary responsibility for this validation would have to be placed upon professional economists and philosophers whose contribution would necessarily be analytic and logical. The contribution of evaluation, in the sense of the data-gathering phase of curriculum development, was judged to be incidental here.

Appropriateness of course materials. A further assumption to be checked was that the instructional materials bore a close relationship to the conception of economics as a subject with an underlying logic of its own. It had to be ascertained that the materials were highly relevant to the theory of the course--that the learning situations, especially, provided an orderly sequence of development in keeping with the unfolding of the discipline of economics. The test of this assumption was through logical analysis, first by members of the staff and later by consultants in economics. There is an empirical (experiential) side to this question which will be considered later in this section.

Adequacy of teaching. Crucial to a trial course such as this was the assumption that the cooperating teachers would be well-grounded

in the theory, subject matter, and methods of the course. It must be determined that the teachers were able to carry out the course as conceived; otherwise, no real test of the course would be possible. Pretesting of teachers on the materials was considered desirable, as well as some preliminary teaching experience with them, but major reliance was to be placed upon observation of teaching in the tryout itself.

It was assumed, specifically, that the interaction of teacher and students with the learning situations would be a process of "progressive inquiry". "Progressive inquiry" was used in the sense that John Dewey used it--as unfolding exploration, as the determining of a problem in such a manner that "the conclusions reached in one inquiry become means, material and procedural, of carrying on further inquiries" (1, p. 140).[2] To quote our staff economist: ". . . there must be an effort to sense and reach for a concept, say, scarcity. Then inquiry will extend its dimensions and step by step, always step by step, the students will explore the ramifications of the emerging notion" (2, p. 149).[3] In this way, the linking of ideas will lay bare the inner structure of the discipline, and students will engage in processes of reasoning, discovery, and re-discovery.

The task of evaluation, with respect to this last assumption, was to determine the degree to which these overt and covert activities

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[2]John Dewey, Logic: The Theory of Inquiry (New York: Holt, Rinehart and Winston, 1960), p. 140.

[3]Meno Lovenstein, "Economics, Educational Philosophy, and Psychology," The Teaching of Elementary Economics, edited by Knopf and Strauss (New York: Holt, Rinehart and Winston, 1960), p. 149. (See p. 16 of this report.)

did take place in the classroom. Did students actually engage in progressive inquiry? Did all, or at least most students, actually discover the underlying ideas rather than only a few students who then declared these to the others? Did they actually think as an economist does? Appropriate procedures would include direct observation of classroom interaction, sound recording of student and teacher utterances, interviews with students, and the method of stimulated recall, as well as subsequent logical and psychological analysis of the information so gathered.

Effectiveness of the course. Under this heading fall the assumptions that have to do with effects produced in students by the course. A major, and rather different, task than the conventional was to determine the extent to which the hypothesized unfolding of meaning took place. Have the students understood, or grasped, through retrospection, the unfolding that has just taken place? A related task was to determine the propensity or disposition of students to continue the inquiry at successive points throughout the course. It is to be noted that these two assumptions require periodic probing during the progress of the course. The outcomes in question are intermediate rather than terminal. Finally, there were the usual assumptions that have to do with the development of outcomes such as the ability to do economic reasoning. Here the task of evaluation was to provide students with situations that would test their acquisition of concepts and their ability to use these in economic reasoning.

Limitations on the Program of Evaluation

The foregoing analysis has indicated the scope and complexity of the evaluation called for. Evaluation of a new course can be very demanding--almost open-ended, it would seem--and especially so in the case of a discipline-centered course such as this one. But a full evaluation on the first trial was out of the question because a variety of practical considerations stood in the way.

Perhaps the most important limitation on a full evaluation was the inadequate preparation of the cooperating teachers in the theory, subject matter, and methods of the course. The teachers also carried a normal load of courses and duties rather than a reduced load which would have enabled them to make the extra preparation that a new course requires. Under such circumstances, a fair test of the course would be extremely difficult, if not impossible.

A second important limitation was the difficulty of producing proper test materials. Few appropriate test items and exercises, and no complete instruments, were available. Assistants first had to familiarize themselves with the course materials--a time-consuming task--before attempting the construction of test situations. Since the writing of teaching units continued well into the trial semester, test construction had to follow along. Moreover, persons well-qualified in evaluation were hard to get, and the evaluator himself was only able to devote one-fifth time during the academic year.

A third limitation was the lack of laboratory-type facilities for conducting the course so that continuous monitoring could be carried out. An intimate study of experiences in the course would have required

electronic recording of class sessions and extensive interviewing of students. Such facilities were not at hand, and the participating schools were, for the most part, remote from Project headquarters.

A further limitation was the lack of comparability of conditions from one class to another. In addition to differences among teachers in preparation for the course, differences arose in such conditions as length of class period, length of time devoted to each learning situation, use of special teaching aids such as review questions, departures from the structure-discovery method, and the preparation of local quizzes as a supplement to the Project tests. Thus, in many little ways, variations entered the course so that full control over conditions did not exist. The limited time of the Project staff and the remote location of most of the schools made it impractical to give teachers the day-by-day guidance and supervision they needed, and thus better control the unwanted sources of variation.

A final limitation is that there were no carefully selected control groups not taking economics, nor control classes taking conventional economics at the ninth-grade level. (The latter are rare.) These conditions, together with some of those noted above, imply that the trial was not an "experiment" in the traditional sense of comparing groups subjected to different treatments. It is not implied, however, that such an "experiment" was theoretically desirable here.

These limitations underscore the fact that this effort at evaluation, like the first edition of the course, was itself a trial. Revisions in the evaluative procedures are called for, just as are revisions in the instructional materials. This first effort gave the staff a

chance to try out methods, to note gaps in the evaluation as well as redundancies, and to speculate about better ways of doing the job. Although the staff formulated what it considered an adequate theory of evaluation and outlined in some detail the various studies to be done, practical limitations kept it from doing all that needed to be done.

Participating Teachers and Classes

From the very beginning of the project, informal discussions and correspondence were carried out with school officials who had expressed an interest in economic education at the secondary level. It became evident that there would be no problem in finding schools willing to try out the course materials. One of the earliest decisions was to get a preliminary check of the first units and accompanying material. An important part of this preliminary check was to consist of tryout in one or a few classes. Cooperation came from Vicky Collins, Washington High School, Massillon, Ohio, who used the materials with twelfth-grade classes and submitted valuable critical comments and suggestions.

Subsequently, other school systems consented to participate in the tryout at the ninth-grade level. Not all systems which had expressed an interest could be accommodated and, even among those which did take part, some had to assume responsibility for reproducing the necessary instructional materials. Table 1 indicates the school systems and the respective number of teachers and classes involved.

Table 1

Participating School Systems

School System	Number of Teachers	Number of Classes
Akron, Ohio	1	2
Cleveland, Ohio	1	1
Columbus, Ohio	1	2
Lakewood, Ohio	12	28
Lexington, Ohio	1	2
Massillon, Ohio	2	2
Plymouth, Ohio	1	1
Worthington, Ohio	1	2
Milton, Pennsylvania	1	2
Salt Lake City, Utah	1	2
Totals 10	22	44

It should be noted that no attempt was made to try to define a "population" of ninth-grade classes and then choose a representative sample of these. This feature was not considered essential for this project. Of course, an attempt was made to get variety in the kinds of schools and communities rather than to concentrate on those which seemed to offer the best prospects for receptiveness and success. It should also be noted that full participation in evaluation had to be limited to the school systems in Ohio (including only two teachers in Lakewood and one each of their participating classes). The classes in Pennsylvania and Utah were considered too distant for the staff to visit and otherwise collect the full array of data. In the end, the participants in the full evaluation consisted of ten teachers and thirteen classes from the Ohio systems listed.

The Teachers and Their Characteristics

As with the selection of school systems and classes, no attempt was made to sample from a defined population of teachers. The limited offering of economics as a separate subject in the high schools precluded any such attempt, even if it were desirable. In essence, the teachers who took part were, for the most part, teachers who were interested in offering an economics course at the secondary level and whose administration was behind them in such an effort.

The group of teachers was indeed a varied one. The members ranged in age from 24 to 48, with a median of 30. All were men, though it was not our intention to limit the sample to this sex. They ranged in teaching experience from just beginning, to twenty years. Eight of the ten teachers had had at least two courses in economics in college; one had had only one course and one, no course at all. None of the teachers had majored in economics; only two had minored in it. Most of these teachers had been offering courses in social studies, history, civics, and geography, but not in economics. However, one teacher had been teaching a course in problems in economics and sociology, for ten years, and two others had been teaching a course in business economics or general business which had considerable economic content. It would seem that this kind of variation would be typical of what would be found in the nation as a whole.

It was decided not to try to relate various of these background characteristics of the sample of teachers to evidences of performance with the trial classes. Partly this decision was based upon the small

sample of teachers, partly upon practical considerations, and partly upon the results of previous studies, which generally have not found high correlations.

The Classes and Their Characteristics

In keeping with the informal nature of the evaluation, no attempt was made to manipulate the composition of classes in any way. The classes were taken just as they came, so to speak. This meant that they most likely would differ in characteristics that would be expected to have a bearing upon achievement.

To assess these important initial characteristics, the staff arranged for pretesting during the first week of the trial period. The teachers themselves gave the instruments to their classes. The instruments consisted of the following: Student Information Form (Appendix B); Test of Economic Understanding, Form A, (Chicago: Science Research Associates, Inc., 1963); Stern Activities Index, Form 1158; and a supplementary collection of questions prepared by the staff and called "Special Written Questions" (Appendix D). The last-named instrument represented an attempt to get at some fairly sophisticated understandings dealing with the concept of structure of ideas, with the nature and importance of discovery, with reasoning as a chain of relationships, and with definition as a continuing enlargement or unfolding of meanings.

While it would be of some interest to report detailed results of pretesting with these instruments, it is not deemed essential to do so. Some of these results will be reported in connection with other parts of this chapter, and some of the more specialized results will be

reported in other sources.[4] Of the characteristics on which the participating classes might be compared, general scholastic ability was considered most important. It was possible to compare the classes on a common test, though not one of those conventionally used for this purpose. (The regular testing programs of these schools varied somewhat in the scholastic aptitude tests used and in the grade level when given.) The common test was the Test of Economic Understanding. Distribution-statistics appear in Table 2 for the classes taking part in the full evaluation.[5]

The mean raw score on this test ranged from about 15 to about 22. While this may not seem like a large range, it did spread the classes out in an order which agreed with other evidences. Thus, for example, group 8 was a class composed largely of poorer students--those assigned to a civics course rather than to more demanding courses which the more able students in that school took during the ninth grade. Groups 3, 4, and 10, at the other extreme, consisted largely of students well above average in scholastic aptitude and oriented toward preparation for college.

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[4]For some interesting findings on the Student Information Form and the Stern Activities Index, see E. J. Furst, "Validity of Some Objective Scales of Motivation for Predicting Academic Achievement," Educational and Psychological Measurement, Winter, 1966.

[5]The data reported in this chapter apply only to the classes of the ten teachers who participated in the full evaluation. The code numbers for these groups remain the same throughout this chapter.

Table 2

Means, Standard Deviations and Estimates of Reliability for Test of Economic Understanding; Form A, Pretest

Group	N	Mean	Percent of Max. (50)	S.D.	Reliability	
					KR-20	Odd-Even
1	43	17.58	35	6.37	.76	.77
2	30	16.83	34	4.60	.53	.20
3	27	21.59	43	4.64	.54	.60
4	21	21.95	44	4.17	.44	.36
5	32	20.84	42	5.01	.58	.51
6	21	17.71	35	3.29	.05	-.33
7	16	17.37	35	6.99	.81	.82
8	58	15.21	30	3.77	.30	.13
9	18	19.17	38	5.04	.62	.70
10	62	21.94	44	5.95	.71	.70
Medians	29	18.44	36	4.83	.56	.56
Control	50	18.65	37	5.92	.71	.75

Table 3 reports product-moment coefficients of correlation which bear out the assertion that the aforementioned common test may be regarded as a good test of scholastic aptitude when given prior to a course in ecomonics. Scores on this test correlated highly with the verbal-symbolic variables shown in the table, and in a rather able group at that, in which such covariation is normally harder to obtain. Group 10 took these two batteries during the first week of the ninth grade, just prior to beginning the economics course. Similar results were not available on the other groups, except for scores on a single scholastic aptitude test or battery given in either the eighth or ninth grade. For a majority of the other groups, the correlation between scores on the Test of Economic Understanding and scores on scholastic aptitude was on the order of .6 or better.

Table 3

Correlations (r) between Pretest Scores on the Test of Economic Understanding, Form A, and Selected Variables

Variable	Mean	S.D.	N	Sample	r
Language Score, CTMM, 1963 S-Form, Level 4	41.90	8.72	60	Group 10	.69
Non-language Score, CTMM, 1963 S-Form, Level 4	37.13	6.87	60	"	.49
Reading Vocabulary, CAT[a] . .	39.08	9.45	60	"	.69
Reading Comprehension, CAT[a]	53.65	12.77	60	"	.80
Math. Reasoning, CAT[a] . . .	44.75	7.73	60	"	.67
Math. Fundamentals, CAT[a] . .	63.03	10.20	60	"	.69
Post-test Score, Test of Economic Understanding . . .	30.19	5.83	57	Group 10	.77
	27.65	6.64	136	All boys[b]	.74
	26.64	6.61	92	All girls[b]	.74
Grade in course Economics .	2.78	.93	60	Group 10	.72
	2.51	.99	136	All boys[b]	.57
	2.63	.96	92	All girls[b]	.69
Grade-point average, 8th and 1st semester of 9th . .	2.93	.74	60	Group 10	.73
	2.56	.81	136	All boys[b]	.67
	2.72	.82	92	All girls[b]	.68

[a]California Achievement Test, Complete Battery, Advanced, Form W, 1957 ed.

[b]Including cases with full records from all groups except 2 and 8, groups for which course grades had not been obtained.

Overview of Evaluative Procedures

As indicated in the introductory section, the tasks of evaluation correspond to a series of checks on various aspects of the course. Each check, or question to be answered, requires one or more evaluative procedures. This section of the chapter will try to give an overview of these procedures, describing them briefly and indicating their function in the total evaluation. The major sub-headings are as follows:

- Criticism of Structure and Materials
- Evaluation of Teaching
- Assessment of Student Achievement, Opinions, and Attitudes

Criticism of Structure and Materials

Members of the staff constituted the first source of criticism. The procedure was for them to submit critiques and suggestions concerning the explicitness with which the sequential nature of the content was presented and the logic of the resulting structure. Individual members (Furst, Jewett, Maccia, and research assistants) first studied the tentative drafts of units prepared by the writing team (Lovenstein, Ribble, and Buchanan). The entire staff then met periodically to go over the criticisms and suggestions, and to reach decisions about changes in the materials.

In addition to this internal criticism, three economists from other universities were consulted on the explicitness and logic of the structure presented in the course. The procedure here was to have two of the economists, James Calderwood and Robert Darcy, comment on the course structure at an early point in its development (May, 1964) and to

have E. S. Wallace provide a written critique of the structure as presented in the revised materials at the end of the project (August, 1966).

The cooperating teachers also supplied the staff with written and oral comments. Each of these teachers was provided with a series of Comment Sheets for the learning situations in each unit and a Comment Sheet on the unit as a whole. The teachers were asked to respond to the manner of presentation of the materials as well as to the specific content. They were also asked to comment upon sections of the Teacher's Guide other than the learning situations. These comments were to be both positive and negative--for example, identification of learning situations felt to be particularly helpful, or, on the contrary, particularly in need of revision.

The students, for their part, were also provided with Comment Sheets for major groups of units. They were asked to answer the following questions: (1) Which units (or unit) did you understand best? Why? (2) Which units (or unit) did you find most difficult to understand? Why? (3) Which of the units did you most enjoy studying? Why? (4) Which of the units did you least enjoy studying? Why? (5) What suggestions would you make for improving these units? The emphasis here was placed upon the "Why?" part of each question in order to obtain more detailed comments.

Following the field-test, the staff held a conference with the participating teachers. This follow-up allowed for an interaction among teachers and gave the staff a chance to obtain a consensus of opinion concerning recommendations for revision. This conference was held in February, 1966. Notes were taken during the conference, later

transcribed, and then used for reference by the staff. Each teacher was also interviewed twice: by the staff economist and by the co-director responsible for evaluation.

Having obtained the comments of teachers and students, the staff made brief summaries to describe the consensus of opinion. Where it was generally felt that a learning situation should be modified, this was done in the revision. A later section of this chapter will give further detail on the comments, their examination, and their use in revision.

Evaluation of Teaching

The field-test gave an opportunity to check the degree to which teachers carried out the course according to the underlying theory. This check was implemented through a program of classroom observations organized by Robert Ribble. He and three other trained observers visited each of the participating teachers five times during the period September through December, 1965. The observational team constructed a device for recording their individual ratings of selected teacher behaviors. The behaviors to be rated were chosen on the basis of an examination of the prescriptions given in the curricular materials. At the end of series of observations, each observer summarized his ratings and ranked the teachers according to adherence to the theory of the course. In addition, each observer wrote a brief description of each teacher's

style and gave the basis for his rating of the teacher's adherence to the course prescriptions.[6]

Assessment of Student Achievement, Opinions, and Attitudes

Mention has already been made of the program of pretesting, and so this will not be further mentioned here. This section will describe other procedures used in gathering data on the students at various points throughout the course, under the following sub-headings:

- Tests Covering Blocks of Units
- Tests Given at End of Course
- End-of-Course Questionnaire
- Possibility of Assessing Certain Changes

Tests covering blocks of units. It was recognized at the outset that the testing done in-course would be an extremely important part of the total evaluative effort. A good case could be made that it should even overshadow any testing done at the end. Indeed, the theory behind the course would require a close check on student progress, especially on the grasp of the unfolding structure. Practical considerations unfortunately compelled the staff to abandon its early insistence upon obtaining extensive recordings of class sessions and of conducting extensive interviews and problem-solving sessions with individual students. Such refinements must await further tryouts of the revised course materials.

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[6]For a more detailed description of the procedures in the observational study, see Robert Ribble, The Structure-Discovery Approach in the Social Studies, unpublished doctoral dissertation, The Ohio State University, 1966.

As a guide to this interim testing, and to all testing done as a part of the program of evaluation, several considerations were kept in mind. One was to get a broad sampling of achievements rather than to hold all students to the same questions and exercises. In other words, parts of each interim test consisted of sub-sets of questions given to representative samples of each class. These sub-sets were confined to the written questions and exercises, and not applied to the multiple-choice. A second consideration was the opposite of the first, and required that some instruments or parts of instruments be given to all students so that comparisons could be made within and between classes. A third consideration was to keep the testing within bounds, to avoid too much formal testing which might distort instruction and learning. Of course, the usual prescriptions for valid and reliable testing were also kept in mind.

The general plan for each interim test was about as follows: to devote about half the period to a common booklet of about 20 multiple-choice items, covering a block of related units as, for example, Units 1-6; to devote some time to a common written exercise or two; and to devote the remaining time to several written exercises or questions that would be distributed on a sampling basis to each class, so that a fraction of each class would work on only one or two of these further questions. The multiple-choice parts are exhibited in the first part of Appendix C; the written questions and exercises, in Appendix D.

For Units 1-6, three written questions were required of all students. These questions were brief and were aimed at the student's grasp of the unfolding structure. There were, however, some optional questions

which the teacher could give if time allowed and he so desired. For Units 7-11, parts a, b, and c of Exercise 1 were required of all; then the student did either d, e, or f as his booklet was so checked. For this second block of units, half the students then did Exercise 2 and half did 3; then each student did one of the remaining four questions--4, 5, 6, or 7. For the next interim test, covering Units 12-14, all students did Exercise 1; then each student did one of the remaining 6 questions offered--2, 3, 4, 5, 6, or 7.

The staff prepared all of the materials, including scoring keys and a special letter of instructions, which were then mailed in advance to the cooperating teachers. As a rule, the teachers scored the multiple-choice part and any other exercises that lent themselves to objective scoring. The evaluation of written answers was left optional; teachers could do this if they wanted. But, in any case, the written answers were to be returned promptly to the staff for its own evaluation, together with the answer sheets for the objective parts.

Following return of all the materials, the multiple-choice answer sheets were re-scored either by hand or by scoring machine, and then subjected to a separate item analysis for each teacher. Two graduate assistants worked out guides for evaluation of the various written exercises and questions, in consultation with the evaluator. The procedure was to read a sample of papers, work out a tentative guide, reach consensus on the final guide, and then run a check on objectivity of grading. It was found relatively easy to achieve a high degree of agreement in evaluation; rank-order coefficients on the order of .90 were the rule. Ordinarily, the readers strove for five levels of quality

for each question to be separately graded (i.e., 0-4 points), provided the question lent itself to that many levels and the students' papers could be discriminated into that many levels. An example of such a guide, complete with model answers, levels of quality, and sample student answers, appears in Appendix D for the so-called "Special Written Questions." There, incidentally, the levels of quality were limited to four (0-3).

The students' written answers, together with the evaluations of the readers, provided the basis for summarization of results. It was thought more helpful and meaningful to go beyond mere statistical tabulation and analysis of quality points to the qualitative description of performance. Consequently, the two readers (one a graduate student in Economics, and the other a secondary teacher of economics and graduate student in Social Studies Education) prepared over-all summaries of results for each question, based upon a study of what the several classes did. The assistants also tried to interpret these results in the light of students' experience with the course materials. These two aspects, namely, the over-all summaries and the interpretive comments, appear in the appropriate parts of Appendix D.

Tests given at end of course. As the end of the trial semester neared, it became clear that the classes were behind schedule and that another interim test covering the remaining units was out of the question. It was also felt that the desired outcomes of the remaining units could be covered fairly well by using instruments that normally would be regarded as terminal tests. One such instrument was the SRA Test of Economic Understanding, for which a slot was reserved. Still another

was the Special Written Questions, Forms A, B, and C, also given as a pretest. In addition to these, the staff developed a special twenty-item multiple-choice test that required the student to relate economic ideas as he was engaged in the interpretation of reading passages and reports on the American economy. This was called "A Test of Interpretation of Reading Materials in Economics." It is exhibited in Appendix C.

As to scheduling, it was suggested that each teacher give a period to the SRA test at the end of Unit 17 or at the end of the next to last week of the semester; that the Special Written Questions be given during part of a period during the last week or two of the semester; and that the interpretive test be given during the last week, upon completion of Unit 18.

End-of-course questionnaire. One further instrument was developed and given at the end. This was simply called "End-of-Course Questionnaire". It was designed to get at certain opinions and attitudes students held toward the course as a whole. The first page consisted of a repetition of the page from the Student Information Form that asked for ratings of certain possible outcomes of an economics course. The second and third pages asked for various ratings of the course. The remaining pages were more or less experimental, using a techique known as the Semantic Differential, and were intended to sample the student's views of economics, both as a subject and as embodied in this course, in relation to three other subjects of presumably partly different characteristics. This instrument appears as Appendix E.

Possibility of assessing certain changes. Ideally, for any new course or curriculum, one would hope to be able to assess changes that

the innovation has brought about in students. The staff envisioned such possibilities and did provide at least for the early and late administration of three instruments: the SRA Test of Economic Understanding, the Special Written Questions, and the page calling for ratings of outcomes of economics. Accordingly, some fairly detailed statistical studies were made of changes on groupings of items on the SRA test, on the separate questions of the SWQ, and on the ratings of outcomes.

Criticism of Structure and Materials

This section of the chapter will present samples of the criticisms made by the economists consulted, by the participating teachers and students, and by the members of the project staff concerning the explicitness and logic of the structure and the utility of the curricular materials in the classroom. This section will also indicate how these criticisms and suggestions were incorporated in the revision of the materials.

Criticism by the Economists

Both of the economists consulted in the early phase of the preparation of materials agreed that the discipline approach to the construction of an economics course as illustrated by the existing materials was a worthwhile endeavor. In general appraisal of the curricular approach, one of them commented, "Careful structuring of the discipline of economics seems to me to be an excellent way to teach the subject, not only in the ninth grade, but at any and all grade levels."

While they agreed with the general approach, the economists suggested ways in which the sequence could be made more explicit. Forty-one suggestions of this type were made. The following examples illustrate the nature of their suggestions: (Page numbers in the economists' comments refer to pagination of the original materials before they were revised.)

1. "P. 21 /Unit 2 - Second Learning Situation/, here is an excellent opportunity to really drive home the importance of technology as the determinant of our resources and give the process and consequences of technological progress their appropriate place in economic analysis. Resources are a function of technology: an important economic truth."
2. "P. 51 /Part I: Sequenced Outline/, resources must first be mobilized into employment, then the question of shifting arises. Here again it is suggested that the overall level of output (and economic activity) might be given separate treatment. In I-C, you begin to discuss demand, whereas up to this point, discussion centered on wants. Is more explanation needed? Mobility is an excellent point to stress, and present treatment including pp. 53-54, is very good."
3. "Pp. 61-67 /Unit 4 - Second Learning Situation/, this would be a very good case for students with greater experience and maturity, but would the language and problems have full meaning for ninth graders?"

Some of the suggestions led to a revision of the materials. For example, the first two suggestions cited above resulted in appropriate

revisions while the third suggestion was countered by the positive response of teachers and students and no change was deemed necessary.

The consultants also made five criticisms of the logic set forth as the structure of the course:

1. "I would like to discuss /the Sequenced Outline's/, slightly unusual approach of first discussing scarcity in terms of total goods and services rather than in terms of the factors (Unit 1) but then switching to the more usual approach of scarce factors (Unit 3). The "unfolding" is now:-"Wants--Scarce Goods and Services--Factors". Could we discuss the relative merits of this as opposed to the sequence:-"Wants--Goods and Services--Factors--Scarcity." As it stands now, the switch between Units 1 and 3 could be confusing and perhaps is unnecessary."

2. "In Unit 5 the sequenced outline says that "allocation" and "efficiency" are often treated together because they both involve "moving" and "combining" the factors; but it does not follow this approach. However, I think his division between "What to produce", "Allocating the resourses", and "Stimulating Efficiency" is confusing. The problem of "What to produce" is one thing. The problem of "How to produce it" is another. The problem of "What to produce" involves primarily the pattern of use of scarce resources and how these will be moved from one use to another. The problem of "How to produce" is one of different factorial combinations and the search for the most efficient combination. (This is mentioned in II-C, but does not seem to reappear). The allocation mechanism, however, whether it be the market or central planning, is the approach to all

three aspects of the central economic problem - "What", "How", and "For Whom." Logically, the sequence should be, first, the need to decide what to produce (i.e., choices between different kinds of consumer goods, between consumer goods and capital goods, etc.); second, the need to decide how to produce goods and services (i.e., with what combination of factors); third, the need to decide how to distribute the product; fourth, the various allocating mechanisms available for accomplishing these three objectives (i.e., the market, central planning, tradition, etc.). Putting it another way, the outlines "What to produce" and "the movement of the factors" (Units 3 and 4) are really one, whereas Unit 5 on efficiency is really "How". "Moving resources" is the function of the economic system as it seeks to answer "What", "How", and "For Whom"."

3. "P. 5, farm surpluses may be wanted, but effective demand for them may not exist as prevailing prices. A basic decision must be made also about the overall level of economic activity; not merely what kinds of goods and services to produce, but how much in total. If it is useful to treat #2 and #3 separately, a strong case can be made for treating what and how much in total separately."
4. "Perhaps Unit 3 would be a good place to discuss more fully the question of what kinds of consumer goods are wanted and demanded, and why wants and effective demand differ for different consumer units."
5. "Unit 6, it seems to me, does not really get down to the real problem, which in our economy is the pricing of the factors in factor markets. The whole idea of the market is downgraded here and leads

me to an important question. /Will the outline/ discuss the market mechanism in detail in Unit 16? If so, I'd like to talk some more about the wisdom of relegating it there rather than relating it to the basic economic problem in the first six units."

The five criticisms of the logic incorporated in the structure stemmed from the alternative notions of structure held by the economists. Since action on their comments would have entailed drastic changes in the existing structure and since the staff agreed that the original structure was adequate, the five preceding comments did not lead to changes in the structure.

Criticism by the Staff

During the first two years of the project, staff meetings were devoted periodically to discussions of both the format and the content of the developing materials. For example, the original format prepared by the economics team called for the inclusion of occasional learning situations designed as reviews of previous materials. The staff decided that such reviews ran counter to the idea of sequential unfolding. Each new situation was to be linked to previous situations thus obviating the need for review.

A second criticism was that the learning situations required a greater sophistication in mathematics than could perhaps be expected of ninth graders. The staff decided that rather than make a premature judgment as to the mathematical abilities of ninth graders, a final judgment would be made after the field test. The research associates, however, did consult with ninth-grade mathematics teachers and attempted

to remain within the limits which these teachers suggested in the further development of the materials.

Early in the development of the materials, each learning situation was viewed as a separate daily lesson until staff criticism and discussion indicated that such a view neglected not only the variation in the length of the learning situations, but also failed to recognize student and teacher differences. Consequently, no time restrictions were placed on the learning situations.

Criticism by Teachers

The following are samples of teachers comments which were considered by the staff.

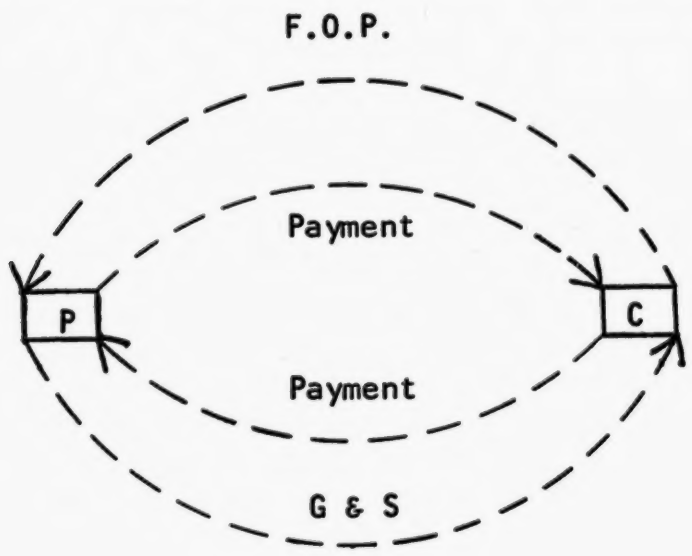
Sample 1

Comments on Unit Z:

"I would suggest an additional problem for students who need more practice."

"The question of how to relate marginalism to the various units is always difficult. To what extent should the teacher use it in class and what desired learning should result concerning marginalism?"

"I spent time on using the model below to show income created and that the flows are circular and continuous. To me this shows the above points more clearly than the diagram used."*



"When starting a new unit the tendency is to emphasize a break and it is therefore hard to show relationship between Units 3 - 6 and 7. Flows are putting into action of decisions made in 3 - 6."

Comments on Learning Situation 1, Unit 7:

"This situation worked very well and students could follow it without a great deal of trouble."

Comments on Learning Situation 2, Unit 7:

"The idea of double counting did not cause too much trouble in this unit, but was mentioned by students in later units when it didn't apply. The idea of inventory and how to figure it in social accounting system was also troublesome."

Comments on Learning Situation 3, Unit 7:

None.

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*In the diagram, F.O.P. = Factors of Production, G & S = Goods and Services, P = Producers, and C = Consumers. See Chapter Three page 232 of the Teacher's Guide and page 596 of the Student Materials for the learning situation which was developed in response to this comment.

Sample 2

Comments on Learning Situation 1, Unit 13:

"This situation has the same disadvantages that I thought you were trying to stay away from reading and lecturing. I think one or two discovery type situations might work better."

"As a homework assignment, I gave the students 11 questions to answer based on the reading."

Comments on Learning Situation 2, Unit 13:

"Again, I must say that while the reading selection is a good one, this type of learning activity does not produce the best results - in my opinion. The diagram on p. 135 is very good but I think it should be earlier in the reading so that the students might have an "overview" of what they are reading about. As with the previous situation, I prepared a list of questions based on the reading which the students answered for homework."

Comments on Learning Situation 3, Unit 13:

"The Federal Reserve Board's decision to raise the rediscount rate was made while we were studying this unit and it fit in very nicely with our study."

"I do not really think that the students will remember for long the various details involved in "easy" and "tight" money policies, but at least they will "always(?)" have some idea of what is meant by these terms and others studied in this unit."

Comments on Unit 13:

"Nothing additional to add."

Sample 3

Comments on Unit 15:

"I feel this unit marked the reversal of a trend toward boredom for the students. During the last few units I felt the students were becoming tired of the subject, but I think they have regained interest now. The stories are good introductions to the main ideas, but I suggest that varied methods of presentation be used."

"I question the note on p. 337 /original materials/ concerning the comparison of the U. S. and Communist economic systems. Why not do this in this unit? Many students have an inadequate understanding of the economic differences and I think it should be taught and this seemed an appropriate time. To not teach it is to assume that someone else

will--and this is not always true. This, of course, must be decided by the individual teacher, and does not have to be included in the materials."

Comments on Learning Situation 1, Unit 15:

"The students enjoyed the story "Saxon Security" and by use of the questions following it, they gained an adequate understanding of what is meant by a traditional economy. They were able to determine many of the characteristics of it--barter system, distrust of others, independence, etc."

Comments on Learning Situation 2, Unit 15:

"This situation seemed to work very well. The students enjoyed the story and were able to pick out most of the differences between a traditional and market economy. At the end of each situation, I ask the students to define in their words what is meant by a traditional economy, market economy, etc."

Comments on Learning Situation 3, Unit 15:

"Rather than have the students read the story, I had it presented as a radio program with a narrator. This seems to work better than merely reading. I erred in not assigning it ahead of time, however, and some students had trouble reading their parts. I feel that from the story and questions the students got a pretty good idea of what is meant by a planned economy."

The content and form of the teacher comments did not permit a systematic tabulation of teacher criticisms and suggestions. The staff decided that individual written comments by the teachers had to be related to the students' reactions and the oral comments made by the teachers at the Follow-up Conference. The synthesis of all the comments and consequent judgments about the revision of the materials remained a staff responsibility.

In the samples given above, the first two illustrate written comments which led to a modification of the learning situations in Units 7 and 13. The learning situations in both units were entirely reorganized. In Unit 7, the First Situation was redesigned to provide a more

prominent integration of the concepts of scarcity (Units 1-6) and an unfolding of scarcity as an introduction to the conception of the circular and continuous nature of the flows.

In Unit 13, the consensus of teacher comments illustrated by the second sample resulted in the development by the staff of non-didactic materials. Learning situations were provided which gave an opportunity for student involvement in the examination of the relevant concepts.

The third sample illustrates a comment which did <u>not</u> lead to modification of the materials. The comments suggest that this unit should perhaps be expanded to include a more detailed comparison of the U. S. economy with the economic systems prevailing in communist societies. The staff felt that Unit 15 was not the appropriate place for this comparison because the discussion of markets in Unit 16 and the discussion of the role of government in Unit 17 were deemed as prerequisites for such a comparison.

Criticism by the Teachers at the Follow-up Conference

The conference between the members of the project staff and the teachers who participated in the field-test of the project materials provided an opportunity for the staff members to explore the teacher's reactions in greater depth than the written comments allowed. Furthermore, the fact that the teachers had completed the course, put them in a position to re-evaluate their earlier comments in the light of total perspective of the course. The following are a representative sample of the comments made at the conference:

1. "Some learning situations were effective, some were not. Students did not like fantasy stories - they are too mature. Realistic stories were better accepted. 'Economica' story was not well received. It would be better to use an isolated community, not another planet."
2. "Why is the second 20-year period necessary in Unit 3? Situation 2, Unit 3 is extremely complicated."
3. "Unit 11 was okay. The money units had too much narrative and too much material. The group was not challenged or interested."
   "Unit 12 was difficult. Maybe a skit would help because the creating and expanding of money was not well presented."
   "Unit 13 is above the students and has no participation opportunities. What is needed is student involvement in Money and Banking."
4. "The Solar-Furnace Co. skit (Unit 4) should be written by the students. Situational descriptions could be given, but students should write the play. Teachers would need guide lines for dramatizing economic concepts."
5. "There is a need for a model budget in Unit 6. The information is needed for the teacher to help discussion."
6. "The students need some over-all view of the sequence of the course. Perhaps a set of charts would help. A summary or introduction to show the linkage approach would help students - a preview or a review. Perhaps this should be placed at the beginning of each of the three sections."

Comments 1, 2, and 3 were responsible for fundamental changes in the format and manner of presentation of Units 3, 7, 11, 12, and 13.

Comment 4 illustrates the notion that has been stressed throughout the development of the materials. They are not presented as the final word in economics education - teachers are expected and encouraged to adapt and modify the materials to their own needs - the only stipulation is that the structure-discovery approach be preserved.

Comment 5 was not acted upon because it would eliminate the opportunity for students to examine fully the concepts involved.

Comment 6 led to a greater emphasis upon the use of the charts illustrating the sequential unfolding of the course structure.

Criticism by the Students

The wide range of the student comments (from one word answers to sophisticated insights) prevented the development of any rigorous tabulation of opinions. In addition to contradictory statements between different students, there was also some contradiction within statements made by the same person. However, student comments were used as an additional source of information and tended to complement those teacher comments which were given serious consideration in the revision of materials. For instance, consulting the student comments on Units 3, 5, 7, 12, and 13, reinforced the teacher observations that these units needed thoroughgoing revision.

The following verbatim samples are illustrative of the student comments:

Comments on the Economics Course (Units 1-6)

Student A

1. Which units (or unit) did you understand best? Why?

"I understood Units 1 and 3 best. Unit 1 because it did not have many terms and complications. Unit 3 because I enjoyed it."

2. Which units (or unit) did you find most difficult to understand? Why?

"I found Unit 4 most difficult because there were many definitions to learn."

3. Which of the units did you most enjoy studying? Why?

"I enjoyed studying Unit 3 because I like to use figures and statistics."

4. Which of the units did you least enjoy studying? Why?

"I did not enjoy studying Unit 1 because I thought it was to easy. The examples were not really necessary."

5. What suggestions would you make for improving these units to make them both more understandable and more interesting?

"I would suggest more places for students to do things such as in Unit 3 and some in Unit 6."

Student B

1. Which units (or unit) did you understand best? Why?

"1, 2, 4, 5."

"Because they were not all numbers, & it was easier to understand them since they were in a story form & it was put in a way that I could understand it."

2. Which units (or unit) did you find most difficult to understand? Why?

"3, 6."

"Because in unit 3, you had to jump from one end of the unit to the other to figure your answers out & there were so many figures.

"Unit 6 was hard because you had to figure out things that you see every day, but which you never really notice & it's hard to remember. The work is getting harder."

3. Which of the units did you most enjoy studying? Why?

"Unit 4."

"Unit 4 was interesting & it held my interest. It was in a play form at the end & when you act it out it was so much easier to understand."

4. Which of the units did you least enjoy studying? Why?

"Unit 6 & 3."

"Because unit 3 was just a bunch of numbers, which was hard to figure out. Unit 3 didn't hold my interest.

"Unit 6 wasn't very interesting & it was hard to understand."

5. What suggestions would you make for improving these units to make them both more understandable and more interesting?

"If they were put in the simplest form to understand, and not making you go from one end of the unit to the other to get your answers especially if you don't know where to get your answers.

"It should be in the simplest forms because if it is to hard to understand, and I know that I loose my interest just as others do, because we just get lost, and once you're lost you don't care anymore.

"So I think to put it in the easiest form as you can, which is still a little hard for us, we want to try and jump up and reach for our answers, were we know that if we try hard we'll get some where, and not be left in outer space."

Comments on the Economics Course (Units 7-14)

Student C

1. Which units (or unit) did you understand best? Why?

"Unit 8 - all points were clarified (formula for Adjusted GNP had best be put in next time, though). Very little was too deep to understand."

2. Which units (or unit) did you find most difficult to understand? Why?

"Unit 11 - pp111-114 - explanations of the multiplier were too involved. An outright definition would help greatly - any main points are too well disguised to pick out.

"Unit 13 - pp131-138 - complicated explanations are worthless (e.g. - p136 para. 2): if it needs to be this complicated to explain, leave it out - it does no good, anyway"

3. Which of the units did you most enjoy studying? Why?

"Unit 14 - the second situation (the first as far as reading is concerned) began as a welcome change from the argot of economics. No muddy ideas - rather a simple situation that could help one relate economics to everyday life. Material that followed did so in a logical sequence with no involved concepts"

4. Which of the units did you least enjoy studying? Why?

"Unit 13 - terribly difficult to understand (see 2.) - the explanations gave it almost no meaning, abstracts are difficult enough to understand, anyway."

5. What suggestions would you make for improving these units to make them both more understandable and more interesting?

"Many more simple explanations, especially on abstracts. Relate them to everyday situations, if possible. Some complicated points are better omitted. Style of writing is good; no changes here, please. More diagrams to explain abstracts (Unit 13) would be helpful. Cultivate lucidity at all times."

Student D

1. Which units (or unit) did you understand best? Why?

"I understood unit 7 the best. It easily shows the idea of flows. And explains value-added good by going thru each step."

2. Which units (or unit) did you find most difficult to understand? Why?

"Unit 13 was the unit that I found was most difficult to understand. The Federal Reserve system is very hard to teach to ninth grader and I think some more work should be done on this chapter."

3. Which of the units did you most enjoy studying? Why?

"I enjoyed studing unit 13 the most. I liked studying our money system and how it operates."

4. Which of the units did you least enjoy studying? Why?

"Unit seven was the unit I least enjoyed studying. I think that it was made to easy for a ninth grader and thus it was boring."

5. What suggestions would you make for improving these units to make them both more understandable and more interesting?

"My suggestion is to make unit seven harder and unit 13 a little easier. I am not saying these chapters should be thrown out, just made more efficient."

Comments on the Economics Course (Units 15-18)

Student E

1. Which units (or unit) did you understand best? Why?

"I understood all of them about equally well, although unit 15 was the best one."

2. Which units (or unit) did you find most difficult to understand? Why?

"None of them were difficult to understand, but I still don't see why, in unit 16, statement no. 12 on pg. 165 goes under the question what to produce, because it says that it has no bearing on it. It isn't taken into consideration, so why put it under that question?"

3. Which of the units did you most enjoy studying? Why?

"Unit 15 - I liked the stories & the discussion about it."

4. Which of the units did you least enjoy studying? Why?

"I didn't LEAST enjoy any of them. 16, 17, & 18 were just units - nothing special or outstanding. They were ok, but not some of the best."

5. What suggestions would you make for improving these units to make them both more understandable and more interesting?

"Your little skit between John & Ivan in unit 17 could have been a lot better. It was kind of dumb and dull.

"And one thing wrong with this course is the use of gobblytigook - big, confusing words that could be cut out. When Mr. Thompson read us your definition of one of the problems in unit 18! You could have taken all those fancy words, and summed it up in a few simple ones. Remember, you're not talking to the government, or even adults, you're talking to teenage kids!"

Student F

1. Which units (or unit) did you understand best? Why?

"Unit 18 - it dealt with problems in which we have had some background and it was something that appears in the paper etc."

2. Which units (or unit) did you find most difficult to understand? Why?

"Unit 16 - I didn't understand the part where we had to label M or P for market or planned and since I didn't understand it I must not of understood the operations well enough"

3. Which of the units did you most enjoy studying? Why?

"Unit 17 - because it not only told what the problems were but showed a lot of the acts that had been passed to correct the problem and in which of 3 areas it could be placed (equity, etc.)"

4. Which of the units did you least enjoy studying? Why?

"Unit 15 - because there wasn't too much material to cover and the same thing was said over and over again (Boring)"

5. What suggestions would you make for improving these units to make them both more understandable and more interesting?

"I would not only state the problems and solutions being worked on but go into a little detail on acts passed for correction of problem (such as #17)"

Evaluation of Teaching[7]

To what extent did the cooperating teachers adhere to the prescriptions for structuring and discovering inherent in this discipline-centered course? An answer to this question was sought in the observational study previously mentioned. This study rested upon the following assumptions:

1. It is possible to observe a pattern of classroom behavior over a reasonable length of time (250 minutes) and number of observations (5) which will typify the total pattern of the classroom behavior.

2. The teacher's pattern of behavior determines the general pattern of classroom behavior.

3. The presence of observers in the classroom will not appreciably distort the classroom behavior.

4. Despite the structuring of the materials for the course, freedom for important differences in classroom behavior exists.

As an aid to observation and recording, the team built a grid which linked the two relevant kinds of behavior. The grid served to focus the observer's attention on specific parts of the lesson. Observers were instructed to record only the teaching strategies used in connection with the categories on structure.

Each learning situation in the materials introduced at least one new concept and expanded at least one of the previous concepts studied. This expansion of a previous concept or concepts in turn resulted in an

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[7]This section is largely an abridgment of the exposition in Ribble, op. cit.

expansion of other concepts previously studied. Obviously, each lesson could not include a recapitulation of the entire structure, but some evidence of linking the lesson concepts to those of the previous learning situations should be present in a course that aims at the discovery of structure. Furthermore, if the concepts of a given lesson are to be expanded in future learning situations, these concepts must be given explicit formulation at the highest level of sophistication possible at that point in the course. This line of reasoning led to the selection of the three categories on the structural dimension.

The prescriptions given by the Project materials for discovery were imbedded in the definition of discussion given to the observers. This allowed less ambiguous definitions of each of the teaching strategies and allowed the observers to record the frequency of each strategy in connection with the categories of structure rather than an over-all judgment of the pervasive strategy.

Figure 1 illustrates the grid and an example of the scoring that recorded an observation of a class. An explanation of the scoring will provide a context for defining the two dimensions of the grid and a description of the recording procedure.

On the dimension of structure, three categories are specified. The first records the number of new concepts from the current learning situation that were introduced. The crossed check marks (✓✗) in this category in Figure 1 indicate that Mr. Jones (a fictitious name) and his class initiated and examined an explicit statement of two concepts from the learning situation currently being studied. In other words, two new propositions were stated and examined. The single crossed check mark in

Figure 1

A Grid for Recording the Degree of Adherence
to the Structure-Discovery Approach
Observed in a Classroom

Structure \ Teaching Strategy	Exposition	Recitation	Discussion
Category I Concepts of the learning situation were made explicit ✗ ✗	✓✓		✓
Category II Linkages of the situation concepts to the concepts of the previous learning situation were made explicit ✗	✓	✓	
Category III Relationships of the situation concepts to the concepts of a unit in the previous structure were made explicit ✗ ✓		✓✓	✓

Teacher's Name Mr. Jones Observer's Name Mr. Ribble

Date November 4, 1965

Comments: The teacher's examination of one of the new concepts led to a student-originated dispute of his exposition. The teacher switched from exposition to discussion.

the second category indicates that Mr. Jones and his class linked at least one new concept with one concept from the previous learning situation. That is to say, one linkage-proposition was initiated and examined. The crossed check mark in the third category of structure indicates that Mr. Jones and his class examined the relationship between one new concept and the previous structure. In other words, a proposition was stated and examined that related one new concept to at least one concept from a previous unit in the materials. The uncrossed check mark indicates that a second concept of this kind was introduced but not examined.

The distinction between the second and third categories was often blurred in meaning, if not in scoring. If the observers were watching a class that was studying the first learning situation in a unit, the propositions of relationship, if any, had to be in category three. If, on the other hand, the class was studying the third situation in a unit that contained five, the probability of category II propositions was greater than that of category III. Since the observations of the ten classes were made at random, the variable stated above was not controlled. The observers continued to use the three categories for recording, but the line between the second and third ceased to have the original significance for interpretation.

The dimension labelled "Teaching Strategy" contained three categories defined as follows:

Exposition is a teaching strategy in which a teacher, a guest speaker, a text, or an audio-visual device tells the students the results of an examination of a concept.

Recitation is a teaching strategy in which exposition is followed by a question-answer period where the students are expected to restate the results of an "authority's" examination of a concept.

Discussion is a teaching strategy in which students are actively engaged in the formulation and reflective examination of a concept.

One other category was seriously considered - individual study. The difficulty with this category was that until the fruits of individual study are communicated, the observers have no way of knowing whether a reflective examination of a concept has taken place. Nevertheless, an operational definition of the structure-discovery approach should include individual study as a possible behavioral characteristic.

The scoring of the dimension of teaching strategy on the grid is almost self-explanatory. Returning to the hypothetical classroom of Mr. Jones, Figure 1 shows that exposition was used twice and discussion once in the course of examining the two concepts of the current learning situation. Exposition and recitation were both used in the process of examining the one linkage concept that was introduced. The teaching strategies used to examine one relationship of a new concept with a concept from a previous unit in the structure, and to initiate another similar relationship, were recitation and discussion.

Ribble developed the grid on the basis of the following operational definition: The use of the structure-discovery approach is characterized by abundant opportunities for the students to engage in discussions and individual studies that promote the formulation of a set of related concepts within the structure of a discipline and an examination of the grounds that support them.

While the observer's judgments recorded on the grid gave some indication of the observed relationship between structure and teaching strategies, one could not tell from looking at a scored grid how to weigh the evidence of reflective discussion against the evidence of attention to structure. For example, consider the grids on the following two pages. Which classroom, according to the observer's judgments recorded on the grids, shows the higher degree of adherence to the structure-discovery approach? One solution would be to disregard all the concepts presented by Mr. Hamilton through exposition and recitation. In this case, Mr. Lukas appears to be adhering to the approach twice as much as Mr. Hamilton. On the other hand, Mr. Lukas ignored the linkage of the new concepts (second situation in Unit nine of the materials) with those of the previous situation and chose instead to relate the new concepts to the concepts of Unit eight. What weight should be given to this omission in making a comparison of the two teachers? Note the switch from comparing classrooms to comparing teachers that has taken place with this last question. The observation of classrooms convinced the observational team that although student behaviors may influence a teacher's choice of strategy, the important fact is that the teacher does make the choice.

The operational definition did not rule out the use of exposition and recitation from the structure-discovery oriented classroom. It did state that "abundant opportunities for the students to engage in discussions and individual studies" should be evidenced. How often must these strategies be used before one could say they have been abundantly used? One could define abundance as a frequency: Abundant use of

Figure 2

A Grid for Recording the Degree of Adherence
to the Structure-Discovery Approach
Observed in a Classroom

Structure \ Teaching Strategy	Exposition	Recitation	Discussion
Category I Concepts of the learning situation were made explicit			
Category II Linkages of the situation concepts to the concepts of the previous learning situation were made explicit ✓	✓		✓✓
Category III Relationships of the situation concepts to the concepts of a unit in the previous structure were made explicit ✓	✓		✓

Teacher's Name Mr. Lukas Observer's Name Mr. Ribble

Date November 15, 1965 Unit 9 Situation 2

Comments: Discussion of the implications of previous concepts was used to create the setting for the new learning situation. The students read the materials for the new learning situation and the teacher formulated the new concept as a proposition (exposition). The concept of the learning situation was examined by a discussion which also led to the student formulation of a proposition relating the new concept with two concepts from previous units. Both exposition and discussion were used to examine the relationship.

Figure 3

A Grid for Recording the Degree of Adherence
to the Structure-Discovery Approach
Observed in a Classroom

Structure \ Teaching Strategy	Exposition	Recitation	Discussion
Category I Concepts of the learning situation were made explicit X	✓	✓	
Category II Linkages of the situation concepts to the concepts of the previous learning situation were made explicit X	✓	✓	✓
Category III Relationships of the situation concepts to the concepts of a unit in the previous structure were made explicit X X	✓✓	✓✓	

Teacher's Name Mr. Hamilton Observer's Name Mr. Ribble

Date November 17, 1965 Unit 9 Situation 3

Comments: After the students read the materials for the new learning situation the teacher formulated and examined all the concepts (Exposition) except one. In each case his exposition was followed by a student recitation in which the students repeated the concepts and the teacher's conclusions. At the close of the lesson a discussion was held concerning further implications of the new concept for concepts of the previous structure.

discussion and individual study means the use of these strategies in five out of every ten choices made by a teacher. But the length of time spent in a discussion or individual study might vary. Why not record the amount of time spent using the different strategies in each classroom? This alternative also seemed unsatisfactory. In the first place, it was difficult to pinpoint the exact time when a teaching strategy changed. More important, even an accurate measure of the amount of time spent would not have told anything about how well each strategy was used. Here was the crux of the difficulty. Frequency counts of gross behavior patterns (a teaching strategy) or minutely detailed behavior (an act) are still frequency counts that defy qualitative interpretation.

Perhaps this statement is too strong. At a minutely detailed level, quantified data may be capable of qualitative interpretation. However, at the gross level of behavioral description connoted by the term "strategy," a qualitative interpretation of quantitative data seems unwarranted. Consider the following hypothetical situation.

Suppose that Mr. Hamilton had used exposition and recitation to build an effective setting for the discussion at the close of the class period. The discussion was a first-rate example of student discovery even though it lasted only ten minutes. Mr. Lukas, on the other hand, allowed the examinations carried on in the three discussions to remain inconclusive because the important relationship between the new concept and the concepts of the previous learning situation were not introduced. The three discussions lasted thirty minutes. To complicate matters even more, suppose that the observational team concurred in judging both

teachers as equal in their adherence to the approach. The judgment refers here to their total assessment of the two observations not to their judgments in scoring the grid.

The hypothetical situation described above invites the question, "What is the meaning of the frequency counts recorded on the grid?" One could safely assume that a teacher who neither made an explicit examination of a relationship between concepts in the structure or allowed students to do so, was not adhering to the approach. One could also safely assume that a teacher who never used discussion as a strategy was not adhering to the approach. (Provided that individual study was not evidenced as a strategy.) One could assume, with a fair degree of certainty, that a teacher who used discussion almost exclusively and who's class showed a high frequency of examinations in all three (two, if categories II and III are combined) categories of structure was adhering to the approach. For a short distance from these extremes, one might still find the frequencies a sufficient warrant; but, for the large gray area in between, the grid records were inadequate descriptions of a teacher's adherence.

The observational team made fifty classroom observations and recorded their judgments on the grid. Each of the ten classrooms was visited five times by the team of observers.

Analysis of Observational Data

In the following table, the teachers are designated by letters and are more or less in random order. The observers are also anonymous, except for II, who was the head. Their backgrounds were as follows:

Observer I was a Master's candidate in Psychology. She had had experience in counseling as a social welfare worker, but no experience in teaching.

Observer II was a Doctoral candidate in Education. He had served as a Research Associate on the Economics Curriculum Project. He was an experienced teacher.

Observer III was a Doctoral candidate in Education. He had served as a Research Associate on a project developing an instrument for the systematic observation of teacher behavior. He was an experienced teacher.

Observer IV was a Doctoral candidate in Education. He had served as a Research Assistant on a project developing an instrument for the observation of teacher behavior. He was an experienced teacher and administrator.

Table 4 reveals fairly consistent high frequencies for ratings on Category I of structure. There were six exceptions out of the forty cases to the above statement (Observer I and Teacher A, Observer I and Teacher I, and Observers I, II, III, IV and Teacher J). Categories II and III, however, showed marked variations in frequencies recorded for the teacher regardless of observer. This means that, generally speaking, it is the frequency of Category II and III concepts exhibited which discriminated the teachers. In other words, the majority of the teachers

Table 4

Frequencies of the Specified Behaviors Recorded by the Observers for Each Teacher on the Scoring Grid

Observer / Teacher	Observer I			Observer II			Observer III			Observer IV		
	Structure	Strategy		Structure	Strategy		Structure	Strategy		Structure	Strategy	
	Category	E	R D	Category	E	R D	Category	E	R D	Category	E	R D
A	I 2	0	0 2	I 11	5	2 12	I 9	4	3 11	I 9	6	5 10
	II 1	0	1 0	II 2	0	2 0	II 5	2	4 1	II 5	2	5 0
	III 3	1	1 2	III 5	0	2 3	III 4	4	4 5	III 6	4	4 4
B	I 13	3	7 3	I 13	8	10 4	I 13	5	12 2	I 11	6	11 5
	II 4	1	4 0	II 5	1	6 0	II 8	0	8 0	II 7	0	7 0
	III 7	1	6 0	III 3	0	3 1	III 5	2	5 0	III 6	3	5 0

Strategy: E=Exposition
R=Recitation
D=Discussion

Structure I = Concepts of the current learning situations
II = Concepts linked to the immediately preceding learning situation
III = Concepts related to the previous structure

Table 4 (Continued)

Frequencies of the Specified Behaviors Recorded by the Observers for Each Teacher on the Scoring Grid

Observer / Teacher	Observer I			Ovserver II			Observer III			Observer IV		
	Structure	Strategy		Structure	Strategy		Structure	Strategy		Structure	Strategy	
	Category	E	R D	Category	E	R D	Category	E	R D	Category	E	R D
C	I 10	4	11 1	I 13	7	11 3	I 14	7	11 3	I 13	8	10 3
	II 7	1	6 0	II 6	2	4 0	II 9	1	10 0	II 5	2	3 0
	III 10	3	9 0	III 10	6	6 1	III 9	2	8 1	III 7	2	6 1
D	I 8	4	5 0	I 9	7	6 3	I 10	5	9 0	I 8	4	7 2
	II 5	2	3 0	II 6	1	4 2	II 5	3	5 0	II 9	5	7 0
	III 10	4	5 0	III 8	6	3 0	III 9	5	7 0	III 7	4	5 0
E	I 15	2	1 4	I 14	3	4 9	I 10	4	3 12	I 12	2	3 13
	II 6	1	1 4	II 5	1	2 2	II 2	0	3 1	II 4	1	2 2
	III 8	0	2 6	III 7	2	2 3	III 5	1	2 4	III 6	1	1 5

Table 4 (Continued)

Frequencies of the Specified Behaviors Recorded by the Observers for Each Teacher on the Scoring Grid

Observer / Teacher	Observer I			Observer II			Observer III			Observer IV		
	Structure	Strategy		Structure	Stragegy		Structure	Strategy		Structure	Strategy	
	Category	E	R D	Category	E	R D	Category	E	R D	Category	E	R D
F	I 13	6	6 4	I 12	9	3 6	I 12	7	10 3	I 13	7	6 5
	II 2	2	1 0	II 4	4	1 0	II 1	1	1 1	II 4	4	1 0
	III 7	2	4 1	III 4	2	1 1	III 5	3	5 0	III 5	2	4 0
G	I 11	1	7 4	I 13	4	3 11	I 11	4	9 7	I 14	4	9 7
	II 7	0	7 2	II 5	2	5 1	II 6	1	7 0	II 7	3	4 1
	III 9	2	6 1	III 8	6	4 2	III 8	2	7 2	III 10	5	8 2
H	I 9	4	8 3	I 12	8	3 6	I 14	10	9 3	I 13	9	7 2
	II 4	2	1 1	II 6	4	1 1	II 5	5	1 0	II 5	5	0 0
	III 5	2	3 1	III 1	0	0 1	III 1	1	1 0	III 5	3	2 0

Table 4 (Continued)

Frequencies of the Specified Behaviors Recorded by the Observers for Each Teacher on the Scoring Grid

Observer / Teacher	Observer I			Observer II			Observer III			Observer IV		
	Structure	Strategy		Structure	Strategy		Structure	Strategy		Structure	Strategy	
	Category	E	R D	Category	E	R D	Category	E	R D	Category	E	R D
I	I 5	2	4 1	I 8	5	4 3	I 8	6	6 1	I 8	5	7 2
	II 2	2	1 0	II 1	1	1 0	II 2	3	2 0	II 5	4	1 0
	III 1	0	1 0	III 5	5	5 0	III 4	2	3 1	III 2	0	2 0
J	I 4	2	1 2	I 6	5	3 2	I 3	5	2 2	I 5	2	3 1
	II 3	3	0 0	II 4	4	0 2	II 5	4	2 2	II 3	1	2 0
	III 5	3	1 0	III 3	2	1 2	III 2	3	0 0	III 1	1	0 0

paid attention to the new concepts of each learning situation, but they varied in the frequency of relationships drawn between the new concepts and those of the previous structure.

The difficulty in interpreting the distinction between Category II concepts and Category III concepts was discussed previously. For the purpose of the following analysis, Categories II and III were combined into a single Linkage Category. Linkage now refers to relationships drawn between new concepts of each learning situation and both the concepts of the previous learning situation and the concepts of previous units.

Table 4 shows that regardless of which observer's record is inspected, variations existed among the teachers in the number of times the discussion strategy was used.

Inspection of Table 4, however, does not readily give an indication of the relative placement of the teachers in relation to the frequencies. Since Table 4 merely totals the raw data of the observational grids, another table is needed. The variations in the frequency counts among the teachers must be translated into a rank-ordering. Inspection of Table 4 does indicate that the rank orders that will be yielded by each of the observer records will vary. How much they vary will indicate the objectivity of the observations. The degree of objectivity, in turn, provides a means for assessing the success of the training of observers and, consequently, sheds some light on the utility of the operational definition.

The problem of translating the frequency counts into four rank-orderings was simplified by introducing an intermediate step. The

intermediate step reduced the continuous frequency ratings with a range from "0" to "20" to three classifications (High degree of adherence, Average adherence, and Low degree of adherence).

Figure 4 shows the scales used to perform the reduction on the structure and discovery dimensions. Since Category I on structure did not discriminate the teachers' adherence, only the frequencies recorded in Categories II and III were used in the classification. An exception was made in the six cases where the observers recorded fewer than seven occurrences of Category I concepts for a teacher. In these six cases, the classification based on the total frequencies recorded in Categories II and III by an observer for a teacher was adjusted downward to the "Low" classification. This adjustment was needed in only two cases of the six because in four cases the total frequencies recorded in Categories II and III by the observer had already placed the teacher in the "Low" classification.

The use of the classification scales resulted in the descriptions as recorded in Table 5. If the structure and discovery classifications are given equal weight, a composite rank-ordering for each observer can be obtained. Table 6 illustrates this and shows variations between the rank-orderings derived from each observer's classified ratings. The degree to which the rank orders vary gives an indication of the objectivity of the observations. Table 7 gives the inter-correlations (r_S) among the rank orders derived from the classified observers' ratings.

On structure and discovery, the means and the medians of the inter-correlations indicate good agreement among observers. For complex

Figure 4

Scales Used to Classify the Frequency Counts

Structure (Categories II + III adjusted for I if below 7)		Discovery (Total D's on all categories)	
0		0	
1		1	
2	Low	2	Low
3		3	
4		4	
5		5	
6		6	
7		7	
8		8	
9		9	
10	Average	10	Average
11		11	
12		12	
13		13	
14		14	
15		15	
16	High	16	High
17		17	
18		18	
19		19	
20		20	

Table 5

Classification of Teachers Based on Frequency of Observer Ratings on the Observation Grid

Observer I			Observer II		
Teacher	Structure	Discovery	Teacher	Structure	Discovery
A	Low	Low	A	Average	High
B	Average	Low	B	Average	Low
C	High	Low	C	High	Low
D	High	Low	D	High	Low
E	High	High	E	High	High
F	Average	Low	F	Average	Average
G	High	Average	G	High	High
H	Average	Low	H	Average	Average
I	Low	Low	I	Low	Low
J	Low*	Low	J	Average	Low

Observer III			Observer IV		
Teacher	Structure	Discovery	Teacher	Structure	Discovery
A	Average	High	A	Average	High
B	High	Low	B	High	Low
C	High	Low	C	Average	Low
D	High	Low	D	High	Low
E	Average	High	E	Average	High
F	Low	Low	F	Average	Low
G	High	Average	G	High	Average
H	Low	Low	H	Average	Low
I	Low	Low	I	Average	Low
J	Low*	Low	J	Low	Low

*Adjusted for Low frequency recorded in Category I

Table 6

Rank-Orderings of the Teachers Based on Classifications Derived from Observer Ratings

Observer I				Observer II		
Structure	Discovery	Structure-Discovery		Structure	Discovery	Structure-Discovery
			High			
C-D-E-G	E	E		C-D-E-G	A-E-G	E-G
B-F-H	G	G		A-B-F-H-J	F-H	A
A-I-J	A-B-C-D-F-H-I-J	C-D	to	I	B-C-D-I-J	H-C-D-F
		B-F-H				B-J
		A-I-J				I
			Low			

Observer III				Observer IV		
Structure	Discovery	Structure-Discovery		Structure	Discovery	Structure-Discovery
			High			
B-C-D-G	A-E	A-E-G		D-D-G	A-E	A-E-G
A-E	G	B-C-D		A-C-E-F H-I	G	B-D
F-H-I-J	B-C-D-F-H-I-J	F-H-I-J	to	J	B-C-D-F-H-I-J	C-F-H-I
						J
			Low			

Table 7

Inter-correlations among the Derived Observer Rank Orders

	Structure Dimension Mean .73 Median .76 (p = .01) I	II	III	IV
I	-			
II	.93	-		
III	.72	.82	-	
IV	.62	.51	.80	-

	Discovery Dimension Mean .76 Median .76 (p = .01) I	II	III	IV
I	-			
II	.75	-		
III	.83	.75	-	
IV	.50	.77	1.00	-

	Composite of Structure and Discovery Mean .72 Median .72 (p >.05 but< .01) I	II	III	IV
I	-			
II	.63	-		
III	.59	.83	-	
IV	.53	.80	.93	-

phenomena such as classroom behavior, observational ratings that show agreement at the .80 level are considered to represent high agreement.

Even with the relationship of the two dimensions provided by the grid, the frequency counts do not give an adequate basis for measuring a teacher's adherence to the approach. If the observers agree, the frequency counts can identify the teachers who were definitely adhering and those who were definitely not adhering. Stated otherwise, teachers who were very strong or very weak on both dimensions could be identified by frequency counts of the specified behaviors. The fact is that, of the ten teachers observed, at least seven could not be so identified and the cases of the other three (E, G, and J) are open to some question.

Each teacher confronted the observers with a unique implementation of the Project materials. The observational grid sensitized the observers to certain behaviors, but the unique quality of the teacher's combination of structuring and strategy was recorded only in the impressions made on the observers. To tap these impressions, the head of the observational team designed a summary instrument. This appears as Appendix F, and is best inspected before reading the exposition below.

Analysis of Data on the Summary Instrument

The summary instrument, which was filled in by the observers one week after the end of observations, permitted the testing of three hypotheses:

H_1 = The observer ratings on each section of the Instrument will be reliable (correlate .90 or above between first rating and second rating made two weeks later).

H_2 = The observer ratings on each section of the instrument will show significant intercorrelation among observers (r_S = .80 or above).

H_3 = There will be a significant relationship between the rank order of the classes on adjusted achievement measures and the rank orders predicted by the observers. (p = .05)

Section One. Section One of the instrument asked the observers to judge the relative degree of adherence to the unfolding structure exhibited by the teachers. Table 8 shows the distributions of the teachers made by each observer on this section. Table 9 shows the inter-correlations among observers derived from the distributions (rank-ordered) in Table 8. Even the lowest inter-correlation, .75 between Observers III and IV, indicates a significant relationship at the p = .01 level.[8] The observers were also reliable in their ratings.

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[8]See "Table of Critical Values of r_S" in Sidney Siegel, Nonparametric Statistics for the Behavioral Sciences (New York: McGraw Hill, 1956), p. 284.

Table 8

Distributions of the Teachers Made by Each Observer on Section One of the Instrument

	Observer I	Observer II	Observer III	Observer IV
1.	F			
2.	E			
3.	B - G	C - E - G	E	G
4.			B - C	C - E - F
5.	H - C	B - F - H	H - F	B - H
6.		D	G	D
7.	D	A	A - D	A
8.			I	I
9.	J - A	I - J	J	J
10.	I			

*The capital letters are the code for the ten teachers.

Table 9

Inter-correlations among Ratings of Observers on Section One

	Rank-difference (r_S) correlations			
	I	II	III	IV
I	.94			
II	.79	.99		
III	.82	.85	.91	
IV	.85	.96	.75	.97

Underlined diagonals are reliability coefficients for two-week intervals. Inter-correlations are based on original ratings.

The low ratings given by all four observers to teachers A, D, I, and J, and the lack of ratings in the first and second positions, indicate that in the judgment of the observers, some aspect of the prescriptions for structure was not evidenced. Reference to Table 4 gives a

strong indication that the teachers were not attending to the prescriptions for unfolding the structure.

Section Two. Section Two of the Instrument asked the observers to judge the relative degree of adherence to the prescriptions for discovery exhibited by the ten teachers. Table 10 shows the rank-order distributions of the teachers made by each observer on Section Two. Table 11 shows the inter-correlations among observers derived from the rank-orders in Table 9. The lowest inter-correlation, .56 between Observers I and III, still indicates a significant relationship at the $p = .05$ level. Three of the six inter-correlations are significant at the $p = .01$ level. The reliability coefficient for Oberserver I, .54, falls slightly below the .564 requirement for a $p = .05$ level of significance. The reliability coefficients for the other observers are all above the $p = .01$ level.[9]

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[9] Ibid., p. 284.

Table 10

Distributions of the Teachers Made by Each Observer on Section Two of the Instrument

	Observer I	Observer II	Observer III	Observer IV
1.	E - F	E		
2.		A	E - A	E
3.				A
4.	C	G - H	H - F	B - C - G
5.	B - G	F	G	F - H
6.	H	B - C		D
7.		D	C	I - J
8.	A - D	J	B - D - I	
9.	J	I	J	
10.	I			

*The capital letters are the code for the ten teachers.

Table 11

Inter-correlations among Ratings of Observers on Section Two

	(Rank-difference (r_S) correlations) I	II	III	IV
I	.54			
II	.60	.99		
III	.56	.92	.79	
IV	.65	.85	.75	.92

Underlined diagonals are reliability coefficients for two-week intervals. Inter-correlations are based on original ratings.

The definition of discussion required the observers to use this designation only when a reflective examination was in evidence. The term did, however, carry a connotation of a high degree of student talk. The observers were confused when the teacher was engaged in an extensive

reflective examination of a student belief. The evidence of a reflective examination promoted rating the strategy as discussion but the low amount of student talk promoted rating the strategy as exposition.

The low ratings given to teachers D, I, and J and the relatively few teachers rated in one of the first three positions indicate that more "teacher telling" than joint "teacher-student examination" was evidenced than one should expect in a course that prescribes a discovery of structure by students.

Section Three. Section Three of the Instrument asked the observers first to judge each teacher's unique combination of the structure and discovery prescriptions and, second, to predict the rank-order distribution of the classes on measures of achievement. In the instructions for this second task, one of the ten classes was designated as the base of comparison. The observers were asked to predict what variations in student achievement would have occurred had each of the ten teachers taught a class like the one designated. This instruction was an attempt to control for some of the variations among classes.

Table 12 presents the distributions of predictions made by the observers. Table 13 shows the inter-correlations among observers derived from Table 12. The reliability coefficients for Observers I, II, and IV (.97, .95, and .95 respectively) are all significant at the $p = .01$ level. The reliability coefficient for Observer III (.72) is significant at the $p = .05$ level. The lowest inter-correlations among observers (.70 between II and IV, and .73 between III and IV) are significant at the $p = .05$ level and close to the .74 r_S required by

Table 12

Distributions of the Teachers Made by Each Observer on Section Three of the Instrument

	Observer I	Observer II	Observer III	Observer IV
1.	E - F			
2.	B - G			
3.		E	E	E
4.	C	A - F - H	F - A	C - F - G
5.	H	G	G - B - C - D - H	B - H
6.		B - C		D
7.	D	D	I	A
8.				I - J
9.	A	I - J	J	
10.	I - J			

*The capital letters are the code for the ten teachers.

Table 13

Inter-correlations among Ratings of Observers on Section Three

	(Rank-difference (r_S) correlations) I	II	III	IV
I	.97			
II	.74	.95		
III	.75	.94	.72	
IV	.93	.70	.73	.95

Underlined diagonals are reliability coefficients for two-week intervals. Inter-correlations are based on original ratings.

the $p = .01$ level of significance.[10] As in the case of the two preceding sections, Section Three showed the observer ratings on the

[10] Ibid., p. 284.

Instrument to be reliable and objective. Thus, the first and second hypotheses of the observational study were generally substantiated.

According to the consensus in Table 12, none of the ten teachers was consistently adhering to the combination of prescriptions for structure and discovery. Two of the teachers (I and J) evidenced virtually no adherence to the theory behind the course. Inspection of the raw data (the observer ratings on the grids) reveals that the other eight teachers showed a general increase in attention to the theoretical prescriptions over the duration of the observational program.

Neither the amount of previous formal training in economics, the size and location of the school, the abilities of the students, or the amount of teaching experience served to explain the variations in adherence observed. This sample of social studies teachers represented a more or less random mixture of all the aforementioned variables. The fact that the teachers were using a new set of materials may, in large measure, account for the general inability to implement the prescriptions consistently. This implies a need for more orientation written into the materials themselves or for an extended orientation program.

Predictions of achievement. Neither the rank order derived from the means of the observers' predictions, nor any single observer's prediction of the rank order of the classes, showed a significant relationship with the rank order derived from the adjusted means of the ten classes on a composite measure of achievement. The composite measure was based upon fifty-three questions used in the course to measure a student's ability to relate concepts within a structure.

Class means ($\bar{X}$) on the composite measure were adjusted for the original variation on the pretest. The pretest score was based on an unweighted sum of each student's score on the Test of Economic Understanding and the Special Written Questions. The means ($\bar{Y}$) for each class on the pretest correlated very highly with intelligence and consequently the Y means alone were used to correct the X means (achievement means).

An analysis of variance of the X and Y scores taken separately showed a significant amount of variation in both the X scores (achievement) and the Y scores (pretest).

Table 14

Analysis of Variance of X and Y Scores taken separately:

Source of Variation	df	SS_x	SS_y	$MS_x(V_x)$	$MS_y(V_y)$
Among Means	9	3,633	3,466	403.7	385.1
Within Groups	269	7,674	10,745	28.5	39.9
Total	278	11,307	14,211		

$F_x = \frac{403.7}{28.5} = 14.165$

$F_y = \frac{385.1}{39.9} = 9.652$

From Table of F

df 9/269

F at .05 level = 1.92

F at .01 level = 2.50

An analysis of covariance was carried out for the purpose of correcting the X (achievement) means for differences in initial Y (pretest) means.

Table 15

Analysis of Covariance

Source of Variation	df	SS_x	SS_y	SS_{xy}	$SS_{x.y}$	$MS_{x.y}$ ($V_{x.y}$)	$SD_{x.y}$
Among Means	9	3,633	3,466	3,024	1,256	139.55	
Within Groups	268	7,674	10,745	5,980	4,346	16.21	4.03
Total	277	11,307	14,211	9,004	5,602		

$$F_{x.y} = \frac{139.55}{16.21} = 8.609$$

From Table of F

df 9/268

F at .05 level = 1.92

F at .01 level = 2.50

Table 17 shows the rank order of the teachers derived from the adjusted achievement means of their classes (Table 16) and the rank orders which the observers had predicted. In addition, the rank order derived from the means of the observers' predictions is also presented.

Table 16

Calculation of Adjusted X-Means

Groups	N	M_x (Achievement)	M_y (Pretest)	$M_{x.y}$ (Achievement adjusted for pretest differences)
A	44	23.36	30.41	20.43
B	41	18.95	24.32	19.37
C	21	25.14	28.71	23.14
D	21	22.95	29.10	20.74
E	22	16.68	22.46	18.32
F	47	14.47	20.64	16.91
G	19	19.47	22.95	20.64
H	31	19.16	27.00	18.11
I	16	16.94	21.56	18.88
J	17	18.00	23.71	18.75
Total N	279			
Grand Means		19.51	25.08	19.53

$$M_{x.y} = M_x - b\,(M_y - \text{Gen. } M_y)^a$$

$$b = b \text{ within} = .55$$

or

$$\bar{X}_{ga} = \bar{X}_g - b_{xy}\,(\bar{Y}_g - \bar{Y})^b$$

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[a]Henry Garrett, Statistics in Psychology and Education (New York: Longmans, Green, 1953), p. 295.

[b]Quinn McNemar, Psychological Statistics (New York: Wiley, 1962), p. 371.

Table 17

Distribution of Actual Achievement Means of the Classes and the Observers' Predictions of the Distribution (Rank-ordered)

Class (by Teacher)	Actual Achievement	Predicted Achievement				
		Observer				
		I	II	III	IV	M
A	4	8	3	2.5	8	7
B	5	3.5	6.5	6	5.5	4
C	1	5	6.5	6	3	5.5
D	2	7	8	6	7	8
E	8	1.5	1	1	1	1
F	10	1.5	3	2.5	3	2
G	3	3.5	5	6	3	3
H	9	6	3	6	5.5	5.5
I	6	9.5	9.5	9	9.5	9
J	7	9.5	9.5	10	9.5	10

The lack of relationship between the observers' predictions of achievement and the actual achievement means of the classes forces a rejection of the third hypothesis. Several factors may have contributed to the failure of H_3. First, the composite achievement test was composed of difficult questions. The questions may have masked some of the differences in teaching-effects that could have existed among the classes.

Secondly, the rank order of the adjusted achievement means did not take into account the amount of difference in means from one rank to the next. Teacher C's class had an adjusted mean of 23.14 (rank 1) and teacher D's class had an adjusted mean of 20.74 (rank 2). This means that ranks 1 and 2 were separated by 2.40 points. Teacher G's class had an adjusted mean of 20.64 (rank 3). This means that ranks 2 and 3 are separated by 0.10 points. In short, the intervals between ranks were

unequal, and with different N's among the classes there was no way to establish equal intervals. The observers predicted some ties among the classes and based their predictions on a conception of equal intervals. In spite of these facts, the agreement between actual achievement and observer prediction should have been higher than it was. At least column M in Table 17, which is based on the mean of the observers' predictions, should have correlated better with the distribution of actual achievement means.

A third possible factor was the complexity of the task required of the observers. The request to predict what the results would be if each of the teachers had taught the same class may have been asking the observers to attend to one complex judgment and at the same time make a second complex judgment, namely, the unique integration of the structure- and discovery-prescriptions by each teacher.

Finally, it is possible that the emphasis on the use of the discussion strategy in the tentative operational definition may have led the observers to over-rate those classes which showed a high ratio of student talk to teacher talk.

Assessment of Level of Achievement

Results on Course Tests

For evidence of student accomplishment, we turn first to results on the various multiple-choice tests. Tables 18 through 22 report results indicating that the classes did fairly well, on the whole, considering the inherent difficulty of the concepts. The median percent of maximum possible score was about 50. Though this may seem like a low

figure, it is not out of line with results on initial tryouts of some of the so-called newer curricula. In building these tests, the staff wanted to keep the items close to the intended objectives and thus assure that there would be sufficient "ceiling" to measure the achievement of classes of varying potential and classes which would take the course in the future.

Table 22 requires special comment as it shows how these trial ninth-grade classes compared with two norms groups at the twelfth-grade level. One of the norms groups, of course, did not take an economics course like the one under study, but rather took a more conventional kind. Seven of our groups equalled or exceeded the norms group which had not yet had economics, while two or three equalled or exceeded the norms group that had had economics. It must be remembered that the SRA Test of Economic Understanding is not a close fit to the objectives of this course, and therefore not entirely fair to these ninth-grade students. Nevertheless the result should not be overlooked that three able ninth-grade groups did do about as well as the norms group with economics at the twelfth grade level.

Table 18

Means, Standard Deviations, and Estimates of Reliability for Test over Units 1 through 6

Group	N	Multiple-Choice, Items 1 to 22				
		Mean	Percent of Max. (22)	S.D.	Reliability KR-20	Reliability Odd-Even
1	43	9.95	45	4.12	.76	.66
2	29	10.00	45	2.71	.41	.55
3	25	12.72	58	2.56	.42	.23
4	21	14.33	65	3.07	.62	.41
5	33	13.79	63	2.76	.51	.43
6	21	12.76	58	3.24	.60	.74
7	17	10.06	46	3.49	.65	.74
8	55	9.55	43	2.92	.48	.40
9	17	10.65	48	2.55	.38	.22
10	60	13.30	60	3.16	.59	.57
Medians	27	11.68	53	3.00	.55	.49

Table 19

Means, Standard Deviations, and Estimates of Reliability for Test over Units 7 through 11

Group	N	Multiple-Choice, Items 23 to 40				
		Mean	Percent of Max. (18)	S.D.	Reliability KR-20	Reliability Odd-Even
1	43	8.26	46	2.94	.59	.62
2	27	6.74	37	2.94	.62	.49
3	26	9.85	55	2.38	.45	.43
4	21	9.43	52	3.56	.79	.86
5	31	9.61	53	2.14	.26	.37
6	20	7.80	43	2.65	.56	.54
7	17	8.88	49	3.04	.64	.65
8	54	8.43	47	3.10	.65	.74
9	17	8.76	49	2.66	.58	.45
10	59	10.56	59	2.96	.67	.59
Medians	26	8.82	49	2.94	.60	.56

Table 20

Means, Standard Deviations, and Estimates of Reliability for Test over Units 12 through 14

Group	N	Multiple-Choice, Items 41 to 65				
		Mean	Percent of Max. (25)	S.D.	Reliability KR-20	Reliability Odd-Even
1	43	13.40	54	3.75	.66	.70
2	30	10.13	40	3.34	.56	.66
3	25	15.44	62	1.89	-.01	.29
4	21	12.19	49	3.17	.56	.55
5	31	11.84	47	3.47	.60	.70
6	20	13.50	54	3.73	.71	.87
7	17	11.12	44	4.33	.76	.84
8	53	11.32	45	3.06	.49	.59
9	17	11.59	46	2.76	.42	.70
10	60	14.53	58	3.34	.60	.62
Medians	28	12.04	48	3.34	.58	.68

Table 21

Means, Standard Deviations, and Estimates of Reliability for Test of Interpretation of Reading Materials

Group	N	Multiple-Choice, Items 1 to 20				
		Mean	Percent of Max. (20)	S.D.	Reliability KR-20	Reliability Odd-Even
1	42	11.14	56	3.76	.71	.66
2	26	8.35	42	3.31	.63	.46
3	24	14.92	75	2.10	.29	.49
4	21	14.00	70	2.51	.48	.64
5	31	10.84	54	3.13	.59	.63
6	20	10.05	50	3.28	.61	.70
7	17	10.47	52	4.26	.78	.91
8	50	8.02	40	3.25	.61	.48
9	17	11.12	56	3.41	.65	.66
10	49	12.80	64	3.37	.67	.79
Medians	25	10.98	55	3.30	.62	.65

Table 22

Means, Standard Deviations, Estimates of Reliability, and Differences from Norms Groups for Test of Economic Understanding, Form A, Post-test

Group	N	Mean	Percent of Max. (50)	S.D.	Reliability		Differences from Norms Groups			
					KR-20	Odd-Even	Without Econ.		With Econ.	
							Diff.	C.R.	Diff.	C.R.
1	42	24.43	49	6.77	.78	.77	+ .06	.06	- 6.05	5.62
2	26	19.65	39	5.78	.70	.73	-4.72	4.14	-10.83	9.34
3	26	32.38	65	3.59	.40	.16	+8.01	11.12	+ 1.90	2.52
4	18	28.33	57	4.95	.65	.73	+3.96	3.38	- 2.15	1.80
5	31	26.71	53	5.28	.67	.71	+2.34	2.44	- 3.77	3.83
6	20	25.75	52	4.87	.60	.35	+1.38	1.25	- 4.73	4.22
7	17	21.47	43	7.07	.80	.90	-2.90	1.69	- 9.01	5.21
8	50	18.98	38	5.97	.71	.88	-5.39	6.31	-11.50	13.02
9	17	24.29	49	6.81	.79	.75	- .08	.05	- 6.19	3.71
10	59	30.34	61	5.74	.73	.72	+5.97	7.83	- .14	.18
Medians	26	25.09	50	5.76	.70	.73	+ .72	——	- 5.39	——

Table 23

Classification of Items on the Test of Economic Understanding, Form A

Classification	Items	Totals
Covered in course	1-7, 10, 13, 14, 17, 19, 21, 22, 25, 26, 28, 30-32, 39, 43-47	26
Subtly covered in course	9, 11, 24, 27, 33, 34, 37, 40, 41, 48-50	12
Not covered in course	8, 12, 15, 16, 18, 20, 23, 29, 35, 36, 38, 42	12

To see whether or not the students did better on items related to the course, the staff economist and a research associate competent in economics independently classified the 50 items on the SRA test into three categories. They then discussed their differences and arrived at the consensus reported in Table 23. It can be seen in Table 24 that the trial classes did relatively better on the items covered in the course, whereas for the norms group the difference was slight. A still better analysis is the study of gains on these three subsets of items. This will be reported in the section on the assessment of changes.

The reader may make a more detailed study of results on the several multiple-choice tests by referring to the item-analysis data in Appendix C. It was thought sufficient to give indexes of success and discrimination for group 1, which may be considered a slightly above-average ninth-grade group of middle-class, urban-suburban background. Also reported are the lowest, median, and highest percent success on each item among the ten groups.

Table 24

Mean Proportion of Group Succeeding on Covered (C), Subtly Covered (SC), and Non-covered (NC) Items, Test of Economic Understanding, Form A, Post-test

Group	(1) C	(2) SC	(3) C & SC	(4) NC	(5) (3)-(4)
1	.52	.47	.50	.44	.06
2	.41	.41	.41	.36	.05
3	.67	.65	.67	.59	.08
4	.61	.54	.59	.47	.12
5	.59	.50	.56	.44	.12
6	.55	.49	.53	.43	.10
7	.41	.48	.43	.40	.03
8	.38	.41	.39	.35	.04
9	.48	.54	.50	.44	.06
10	.64	.56	.61	.57	.04
Medians	.54	.50	.52	.44	.06
Norms Group[a]	.62	.58	.61	.58	.03

[a]Group with course in economics, based upon data in Interpretive Manual and Discussion Guide, Test of Economic Understanding (Chicago: SRA, 1964).

In interpreting the estimates of reliability for these tests, one should bear in mind that each multiple-choice test comprised part of the testing session and was limited to about twenty items in order to allow time for written questions. The results on the written questions should be considered an important source of evidence also. Because of the amount of detail in the over-all summaries and interpretive comments on these written parts, these evidences were placed in Appendix D. They should be read for a fuller account of student achievement.

A study of the results in the Appendices will show that the participating classes have some distance to go before they can be said to

have achieved the course goals. A firm grasp of the concepts, especially as demonstrated in the ability to do the written exercises and questions, cannot be attained through inexpert teaching and superficial study. One of the main objectives, namely, the grasping of the unfolding structure, was apparently not well attained; at least not as sampled by certain questions for Units 1-6 and by a few written questions for the next block of units. It is likely that this level of understanding cannot be reached without much more deliberate attention by teachers.

A Comparison of Results on Two Successive Trials by the Same Teacher

It has been stated already that the teachers operated under handicaps such as limited understanding of economics and of this course in particular. Since teacher E was to repeat the course during the second semester, this afforded an opportunity to see whether a second trial would produce better results than the first. Presumably a semester of experience should make a difference.

The comparison to be reported here is by no means a carefully controlled study. It could not be because of differences in the compositions of the respective classes, and in other conditions apart from the teaching itself. In view of these differences, it was decided to match pairs of subjects from the two classes--Group 2, the first-semester class, and E's second-semester class. Close matching with respect to pretest score on the economics test, to level of motivation, and to stated academic interests, yielded a sample of six pairs. The paragraphs below give a descriptive summary comparing the performance of these two samples of six each, on largely the same course tests.

The first-semester students gave brief and unrelated answers, especially on the first two interim tests, in which they related only the most basic concepts of scarcity and the flows. In contrast, the second-semester students recognized and discriminated between a greater number of concepts such as efficiency, GNP, equilibrium, value-added, and the function of consumer savings.

The first-semester students had a tendency to state the concepts in a rote manner and explained them vaguely or not at all, whereas the second-semester students related and explained the concepts more fluently using economic terms. The depth of their understanding was revealed in their explanations on the higher level. They related scarcity in the production of goods and services to scarcity of the factors of production. They related the four basic decisions to each other and to final production rather than explain them as isolated steps. They related efficiency to scarcity and the allocation of resources, in contrast to the tendency of first-semester students to speak of equality of division. They had a broader understanding of resources to include all of the factors of production. One of the greatest contrasts appeared in their understanding of national-income accounting, the meaning of GNP, and consumer savings and investments as a source of loans. They also included a broader range of aspects of the concept or problem in their explanations such as the possible solutions for scarcity, the application of scarcity and income of the individual to that of the nation, the possibility of analysis as a result of relating concepts which resulted from understanding the four-fold division and international trade and consumer savings. Some of the second-semester students were able to

correlate economic concepts to the extent that they understood growth; this contrast between first- and second-semester students was revealed in both the written questions and the multiple-choice.

The greatest over-all improvement of second-semester students was apparent in the quality of the answers to written questions, which was not revealed by the numerical ratings. The first-semester students achieved a certain degree of accuracy for giving the correct answer but they were hesitant to give detailed explanations and failed to relate concepts, especially in the first part of the course; many of them had a tendency to explain their answers in terms of their own economic and political philosophy rather than in terms of economic theory, much of which did not indicate an understanding of the concept. Some of the loss of points by second-semester students was the result of attempting explanations beyond a well-defined understanding, which led to inaccuracies.

In general, the second-semester students had a clearer grasp of ideas and more ability to work with them as well as to recognize and assimilate facts. It may be inferred that a semester of experience did make an important difference in the results this teacher got.

Assessment of Changes in Students

Table 25 reports a variety of data on changes in the three sub-scores on the Test of Economic Understanding. Included is a test of the significance of differences from pre- to post-test for the four largest groups. Of further interest is the relative order of the gains in average proportion of items passed on the three sub-sets: covered,

subtly covered, and non-covered items. This relative order, as expected on logical grounds, was found to be borne out by the statistical data. Thus, Kendall's coefficient of concordance, W, which is a measure of the degree of association of k rankings of N objects, came out as .65 and is significant at the .01 level.[11] The average rank-difference coefficient of correlation (r_S) between the expected order and the actual order, taken over all ten groups, was .61.

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[11]Siegel, op. cit., Table R, p. 286.

Table 25

Pretest and Post-test Data for the Test of Economic Understanding, Form A

Group	Sub-score	Mean		S.D.		r_{12}	Diff., M_2-M_1
		Pre (1)	Post (2)	Pre (1)	Post (2)		
1	C	9.20	13.39	3.79	4.35	.13	4.19
N_1=43	SC	4.32	5.66	2.17	1.78	.19	1.34
N_2=42	NC	4.15	5.24	1.87	1.69	.17	1.09
2	C	7.46	10.73	2.12	3.16	.55	3.27
N_1=30	SC	4.85	4.96	1.51	1.70	-.14	.11
N_2=26	NC	4.15	4.34	1.83	2.15	.35	.19
3	C	11.00	17.44	2.71	2.50	.21	6.44
N_1=27	SC	5.96	7.84	1.75	1.51	.24	1.88
N_2=26	NC	4.96	7.12	1.64	1.70	.36	2.16
4	C	10.56	15.83	2.59	3.11	-.07	5.27
N_1=21	SC	5.39	6.50	1.57	1.50	.06	1.11
N_2=18	NC	5.11	5.67	1.49	1.67	.08	.56
5	C	10.48	15.39	3.17	3.29	.61	4.91
N_1=32	SC	5.26	5.94	1.46	1.29	.40	.68
N_2=31	NC	5.35	5.26	1.96	1.88	.46	.09
6	C	9.20	14.25	2.34	3.03	.28	5.05
N_1=21	SC	4.40	5.90	1.66	1.87	.17	1.50
N_2=20	NC	4.45	5.15	.92	1.85	-.01	.70
7	C	8.62	10.69	4.61	4.50	.77	2.07
N_1=16	SC	4.38	5.81	1.80	2.07	.34	1.43
N_2=17	NC	4.38	4.81	1.62	1.29	.55	.43
8	C	6.70	9.82	2.39	3.80	.42	3.12
N_1=58	SC	4.24	4.86	1.82	2.05	.16	.62
N_2=50	NC	4.06	4.20	1.49	1.80	.03	- .14
9	C	9.35	12.41	3.32	3.93	.47	3.06
N_1=18	SC	5.47	6.53	1.79	1.85	.16	1.06
N_2=17	NC	3.94	5.24	1.80	2.13	.50	1.30
10	C	11.47	16.59	3.89	3.75	.67	5.12
N_1=62	SC	5.34	6.71	1.75	1.41	.22	1.37
N_2=59	NC	5.15	6.86	1.84	1.84	.51	1.71
Control	C	9.98	8.58	6.13	3.32	.20	-1.40
N_1=54	SC	5.04	4.64	1.90	1.99	.31	- .40
N_2=50	NC	4.58	4.42	1.80	1.56	.19	- .16
Norm Group[a]	C	12.22	16.17	b	b	b	3.95
N_1=2307	SC	5.82	7.03	b	b	b	1.21
N_2=927	NC	5.75	6.99	b	b	b	1.24

[a]Twelfth-grade groups, with and without course in economics. See Interpretive Manual and Discussion Guide, Test of Economic Understanding, Chicago: Science Research Associates, Inc., 1964.

[b]Data could not be obtained from manual.

Table 25 (Continued)

% Gain	σ Diff.	C.R.	$\bar{P}_1$	$\bar{P}_2$	$\bar{P}_2-\bar{P}_1$
46	.84	4.99	.35	.52	.17
31	.40	3.35	.36	.47	.11
26	.36	3.03	.35	.44	.09
44	. .	. .	.29	.41	.12
2	. .	. .	.40	.41	.01
5	. .	. .	.35	.36	.01
59	. .	. .	.42	.67	.25
32	. .	. .	.50	.65	.15
44	. .	. .	.41	.59	.18
50	. .	. .	.41	.61	.20
21	. .	. .	.45	.54	.09
11	. .	. .	.43	.47	.04
47	.51	9.63	.40	.59	.19
13	.27	2.52	.44	.50	.06
2	.36	.25	.45	.44	-.01
55	. .	. .	.35	.55	.20
34	. .	. .	.37	.49	.12
16	. .	. .	.37	.43	.06
24	. .	. .	.33	.41	.08
33	. .	. .	.37	.48	.11
10	. .	. .	.37	.40	.03
47	.50	6.24	.26	.38	.12
15	.36	1.72	.35	.40	.05
(- 3)	.33	.42	.34	.35	.01
33	. .	. .	.36	.48	.12
19	. .	. .	.46	.54	.08
33	. .	. .	.33	.44	.11
45	.40	12.66	.44	.64	.20
26	.26	5.29	.44	.56	.12
33	.24	7.21	.43	.57	.14
(-14)	.90	1.55	.38	.33	-.05
(- 8)	.32	1.24	.42	.39	-.03
(- 3)	.30	.53	.38	.37	-.01
32	. .	. .	.47	.62	.15
21	. .	. .	.48	.59	.11
22	. .	. .	.48	.58	.10

As implied in the description of evaluative procedures, each student took the same form of the Special Written Questions early and late in the course. The repetition made possible the study of improvement on the various questions. Tables 26-28 report appropriate data. All three groups made statistically significant gains on total score, on most of the common questions, and on certain of the remaining questions that varied according to the form of the test booklet. A description and interpretation of these results appears in Appendix D and should be consulted for such qualitative details. It may be noted here that the gains, though good, still left considerable room for improvement.

Table 26

Means, Standard Deviations, and Significance of Differences on the Special Written Questions Given at the Start and the End of Course, Form A (N=90)

Quest.	Max. Points	M_1	s_1	M_2	s_2	$r_{1.2}$	M_2-M_1	σ diff.	C.R.
1	3	1.28	.80	1.73	.66	.23	.45	.10	4.50
2a	3	1.97	.95	2.26	.62	.04	.29	.12	2.42
2b	3	.88	.61	1.07	.65	.22	.19	.08	2.37
2c	3	.78	.79	1.36	.66	.18	.58	.10	5.80
3a	3	.68	.76	1.03	.90	.33	.35	.10	3.50
3b	3	.47	.69	.79	.81	.21	.32	.10	3.20
4a	3	.41	.59	1.48	1.14	.17	1.07	.13	8.23
4b	3	.78	.59	1.20	.97	.22	.42	.11	3.81
5a	3	.99	1.05	.94	.90	.22	-.05	.13	.38
5b	3	.79	.55	1.12	.70	.27	.33	.08	4.13
Total Score	30	9.00	3.73	12.98	4.28	.58	3.98	.38	10.47

Table 27

Means, Standard Deviations, and Significance of Differences on the Special Written Questions Given at the Start and the End of Course, Form B (N=90)

Quest.	Max. Points	M_1	s_1	M_2	s_2	$r_{1.2}$	M_2-M_1	diff.	C.R.
1	3	1.20	.76	1.61	.74	.34	.41	.09	4.56
2a	3	1.69	.95	2.20	.67	.11	.51	.12	4.25
2b	3	.98	.60	1.13	.65	.29	.15	.08	1.88
2c	3	.80	.75	1.22	.73	.22	.42	.10	4.20
3a	3	1.00	.82	.98	.93	.43	-.02	.10	.20
3b	3	.58	.74	.77	.76	.28	.19	.09	2.11
4a	3	2.88	.51	2.91	.44	-.04	.03	.08	.38
4b	3	.94	1.21	1.58	1.25	.21	.64	.16	4.00
4c	3	2.49	1.11	2.67	.92	.32	.18	.13	1.38
4d	3	.78	1.16	.89	1.24	.33	.11	.15	.73
5a	3	1.03	.75	1.98	1.08	.36	.95	.11	8.64
5b	3	.33	.65	.81	.92	.23	.48	.10	4.80
5c	3	.70	.99	1.32	1.17	.23	.62	.14	4.43
Total Score	39	15.40	5.01	20.02	5.30	.66	4.62	.45	10.27

Table 28

Means, Standard Deviations, and Significance of Differences on the Special Written Questions Given at the Start and the End of Course, Form C (N=88)

Quest.	Max. Points	M_1	s_1	M_2	s_2	$r_{1.2}$	M_2-M_1	$\sigma_{diff.}$	C.R.
1	3	1.28	.78	1.61	.73	.19	.33	.10	3.30
2a	3	1.85	.90	2.22	.75	.25	.37	.04	9.25
2b	3	1.05	.66	1.18	.70	.16	.13	.09	1.44
2c	3	.86	.81	1.15	.75	.31	.29	.10	2.90
3a	3	.89	.85	1.12	.94	.26	.23	.12	1.92
3b	3	.55	.69	.94	.84	.42	.39	.08	4.88
4a	3	.73	.67	1.24	.87	.21	.51	.10	5.10
4b	3	1.53	1.38	1.72	1.09	.15	.19	.17	1.12
4c	3	.59	.76	1.11	1.04	.33	.52	.11	4.73
5a	3	1.02	1.02	1.70	1.22	.27	.68	.14	4.86
5b	3	.85	.85	1.00	.87	.25	.15	.11	1.36
Total Score	33	11.20	4.13	15.00	5.13	.64	3.80	.43	8.84

The third and final instrument that yielded data on changes was the single page calling for ratings of the importance of nine possible outcomes of an economics course. An analysis of variance was done on these two sets of ratings using a three-factor design. The factors were A, the ten groups, treated as random effects; B, the nine opinion scales, fixed effects; and C, the two times or occasions when the ratings were made, fixed effects. The results of this analysis appear in Table 29. They indicate that, with respect to the ratings under consideration, the groups may be considered random samples from the same population. The main effect for the factor of opinions, disregarding time, was large; that is, there were statistically significant differences between the several outcomes rated. There was evidently no significant effect for the factor of time by itself. But significant interactions were present between groups and times, and between particular outcomes and times.

Differences between the ordered means for the nine possible outcomes appear in Table 30. Each of these ordered means is an average of the pre- and post-means for that rated possible outcome. The majority of the differences between one mean and another came out as statistically significant. The table is read by comparing the particular difference with the difference required for statistical significance. "Steps apart" is one more than the actual difference in rank order.

Table 29

Analysis of Variance for Data on Opinions about Outcomes of Economics

Source	Sums of Squares	d.f.	Mean Square	F
Between Subjects				
A (groups)	64.856	9	7.206	1.655
Subjects within groups	1149.551	264	4.354	
Within Subjects				
B (scales, or outcomes)	664.681	8	83.085	53.357**
A by B	112.116	72	1.557	1.526
B by subjects within groups	2154.893	2112	1.020	
C (occasions)	11.866	1	11.866	3.720
A by C	28.703	9	3.189	2.021*
C by subjects within groups	416.636	264	1.578	
B by C	18.675	8	2.334	2.957**
A by B by C	56.837	72	0.789	1.209
B by C by subjects within groups	1379.344	2112	0.653	

**Significant at .01 level.

*Significant at .05 level.

Table 30

Critical Differences between Ordered Means of Opinions about Outcomes of Economics[a, b]

Opinion Scale	f	g	d	e	a	c	h	i	b
Mean, before	3.034	3.118	3.476	3.430	3.445	3.659	3.821	3.746	4.491
Mean, after	3.029	3.025	3.190	3.275	3.542	3.631	3.495	3.754	4.336
Ordered means	3.032	3.071	3.333	3.353	3.493	3.645	3.658	3.750	4.414
f (structure)									
g (references)	.040								
d (definitions)	.301	.262							
e (interp. data)	.321	.281	.020						
a (arguments)	.462	.422	.160	.141					
c (principles)	.613	.574	.312	.292	.152				
h (facts)	.626	.586	.325	.305	.164	.013			
i (soc. probs.)	.719	.679	.417	.397	.257	.105	.092		
b (own affairs)	1.382	1.342	1.081	1.061	.920	.769	.756	.664	

	Critical differences according to number of steps apart							
Steps apart	2	3	4	5	6	7	8	9
Crit. diff.	.161	.194	.213	.227	.237	.246	.253	.260

[a]Each ordered mean is an average of the before- and after-mean on that opinion scale. Critical differences are underlined in table.

[b]Newman-Keuls method as outlined in B. J. Winer, Statistical Principles in Experimental Design (New York: McGraw-Hill, 1962), p. 80-85.

Of especial interest is the fact that the outcome f, learning the structure of economics, was rated lowest in importance on the average of the before-and-after means. It is clear that ninth-grade students regard this possible outcome as of little importance to them. Possible outcome g, learning reference sources, fared much the same. At the other end, possible outcomes having themes of applying economics, as b, managing one's own financial affairs, and i, studying important social problems, were rated highest. To a considerable extent, outcomes a, c, and h also seemed to fit in with this theme of practical application.

The course, then, did not change the views of students on the importance of learning the structure of economics, at least so far as this kind of evidence showed. This datum is consistent with the relatively poorer showing of the students on questions sampling understanding of the unfolding structure. Nor did the course change the views of students on most of the other possible outcomes, considering all groups together. Two exceptions were d, learning definitions, and h, learning important factual knowledge, each of which dropped about a third of a point on the average.

Assessment of Student Opinions and Attitudes about the Course as a Whole

We come now to some final, and obviously crucial, evidence: the way students felt about the course after they had nearly completed it. The core of this evidence was the student responses to four items in the End-of-Course Questionnaire, and it is summarized in Tables 31-34.

As to the amount of material, about half of the total group felt this was about right and about half thought there was at least somewhat more material to cover than there was time for. This latter figure is high enough to suggest that, for some groups at least, more time is needed to cover the units as developed for the first tryout. But this suggestion needs careful weighing, considering the handicaps under which some of the classes operated. Group 2, for example, started the course about three weeks after the others; and groups 7 and 9, which also had rated the amount of material as excessive, did not have the benefit of good teacher preparation.

Degree of liking for the course was, on the whole, good. About 17 percent expressed dislike, 26 percent neutral, and 57 percent, some degree of liking. It is especially noteworthy that the group which had the least academic promise, group 8, was near the top in its liking for the course. This group had the benefit of good teacher preparation and effort.

The item concerning the difficulty of the course tended to elicit a wider spread of opinion than the preceding. Table 33 shows variation between the classes in opinion, with some slight over-all tendency to regard the course as harder than other courses being taken.

In one sense, the crucial test is whether or not the students would recommend the course for the next group of ninth-graders in their school. Here we find that half of the total sample would recommend it, that about 30 percent were neutral, and that about 20 percent would not recommend it. While one might hope for a greater percent of recommendations, the results are by no means discouraging for a first trial.

Table 31

Ratings of Amount of Material Covered in the Course

	Percent Choosing Each Response, by Group										All Cases
	1	2	3	4	5	6	7	8	9	10	
a) We had much too much material for us to cover in one term. (5)[a]	5	32	0	0	7	5	47	10	12	12	11
b) We had somewhat more material to cover than we had time for. (4)	22	56	35	10	58	45	24	38	53	41	38
c) The amount of material covered was about right. (3)	68	12	61	76	35	45	29	52	35	35	46
d) We had somewhat less material to cover than we could have covered. (2)	5	0	4	14	0	5	0	0	0	7	4
e) We had too little material to cover; there was time for much more. (1)	0	0	0	0	0	0	0	0	0	5	1
Total	100	100	100	100	100	100	100	100	100	100	100
N	41	25	26	21	31	20	17	50	17	59	307
Mean	3.27	4.20	3.31	2.95	3.71	3.50	4.18	3.58	3.77	3.48	3.52
S.D.	.63	.63	.54	.49	.58	.67	.86	.67	.64	.96	.76

[a]Code or scale value assigned for purposes of statistical analysis.

Table 32

Ratings of Degree of Liking or Disliking the Course

	Percent Choosing Each Response, by Group										All Cases
	1	2	3	4	5	6	7	8	9	10	
a) I liked it very much. (5)	15	12	35	29	10	5	6	32	6	12	17
b) I liked it somewhat. (4)	44	44	42	33	55	40	41	42	23	32	40
c) I neither liked nor disliked it. (3)	34	32	12	24	32	40	12	16	53	22	26
d) I disliked it somewhat. (2)	5	8	8	14	3	10	35	8	18	20	12
e) I disliked it a lot. (1)	2	4	3	0	0	5	6	2	0	14	5
Total	100	100	100	100	100	100	100	100	100	100	100
N	41	25	26	21	31	20	17	50	17	59	307
Mean	3.63	3.52	3.96	3.76	3.71	3.30	3.06	3.94	3.18	3.09	3.58
S.D.	.88	.94	1.06	1.02	.68	.90	1.11	.99	.78	1.24	1.01

Table 33

Ratings of Difficulty of the Course

	Percent Choosing Each Response, by Group										All Cases
	1	2	3	4	5	6	7	8	9	10	
a) It was the hardest subject I took. (5)	15	28	19	5	3	5	18	10	23	29	16
b) It was one of the harder ones but not the hardest. (4)	34	52	43	19	45	30	18	24	35	41	35
c) It was about average in difficulty. (3)	29	16	19	24	23	15	35	32	24	19	24
d) It was one of the easier ones but not the easiest. (2)	22	4	19	52	23	30	17	22	18	8	20
e) It was the easiest subject I took. (1)	0	0	0	0	6	20	12	12	0	3	5
Total	100	100	100	100	100	100	100	100	100	100	100
N	41	25	26	21	31	20	17	50	17	59	307
Mean	3.42	4.04	3.62	2.76	3.16	2.70	3.12	2.98	3.65	3.83	3.30
S.D.	.99	.77	1.00	.92	1.02	1.23	1.23	1.16	1.03	1.04	1.12

Table 34

Over-all Recommendation of the Course for
"Next Year's Ninth-grade Classes"

	Percent Choosing Each Response, by Group										All Cases
	1	2	3	4	5	6	7	8	9	10	
a) I would not especially recommend it. (1)	7	20	8	19	10	0	30	24	12	32	18
b) I would have no particular feelings either way. (2)	32	24	11	0	42	55	35	30	53	34	31
c) I would feel inclined to recommend it. (3)	61	56	81	81	48	45	35	46	35	34	51
Total	100	100	100	100	100	100	100	100	100	100	100
N	41	25	26	21	31	20	17	50	17	59	307
Mean	2.54	2.36	2.73	2.62	2.39	2.45	2.06	2.22	2.24	2.02	2.33
S.D.	.63	.79	.60	.78	.66	.50	.80	.81	.64	.81	.78

In order to understand the influences behind the students' recommendations, certain coefficients of correlation were computed as shown in Table 35. Responses a and b on the recommendation-item were coded 0; response c was coded 1. Coefficients were also run with degree of liking as a criterion. The data show that the recommendation was not highly predictable, though there were some small positive relationships with certain measures obtained early in the course. Three such correlates are measures of intellectual interests (variables 10, 12, and 15) and make good sense in this context. Liking for the course correlated the highest with recommendation, but this cannot be considered a predictive relationship as the respective judgments were obtained almost simultaneously at the end of course.

An attempt to find a relation between the mean recommendation for each of the several groups, and the teacher's degree of adherence to the prescriptions for structure and discovery, was not successful. The rank-order correlation was .15, too small to be significantly different from a zero correlation. The corresponding figure for degree of liking and degree of adherence was .22, also too small to be statistically significant.

The part of the questionnaire titled "Word Associations" also yielded data on views of the course. Means on the ten scales for "This Course in Economics" hovered about the mid-point on the 5-point scale, except for three scales. Scales 1, 10, and 5 (useful, important, and good, respectively) averaged out about 4 with a standard deviation of about 1. These three means thus constitute further evidence of favorable opinion.

Table 35

Correlations between Selected Variables and Two Final Ratings of Course

Variable	Recommendation	Liking
Ratings of possible outcomes, Student Information Form, p. 2		
1. (a) (analyze arguments)	.01	.04
2. (b) (manage own affairs)	.06	.09
3. (c) (explain economic conditions) . . .	.06	.05
4. (d) (learn definitions)	.05	.07
5. (e) (interpret economic data)	.14*	.17**
6. (f) (learn structure of economics) . . .	.04	.14*
7. (g) (learn reference sources)	-.01	.03
8. (h) (learn facts)	-.01	.08
9. (k) (apply to social problems)	.11	.01
Scales from Stern, Activities Index		
10. Humanities, Social Science	.20**	.20**
11. Reflectiveness	.09	.07
12. Understanding	.25***	.24***
13. Achievement	.11	.15*
14. Counteraction	.09	.12
15. Energy	.15*	.15*
16. Order	.00	.07
17. Practicalness	.09	.08
18. Science	.15*	.16**
19. Achievement Motivation scale	.11	.09
20. Pretest, Test of Economic Understanding	.15*	.12
21. Pretest, Special Written Q's. 1-3 . . .	.08	.09
22. Composite index of achiev. in course . .	.23***	.17**
Ratings of course at end		
23. Amount of material	-.18**	-.19**
24. Difficulty	-.14*	-.28***
25. Degree of liking	.40***	. .
26. Over-all recommendation	. .	. .

*Significant at the .05 level.

**Significant at the .01 level.

***Significant at the .001 level.

Generally, students did not differentiate their concept of economics from their concept of this course. In fact, their mean ratings of these two on the accompanying scales did not show any statistically significant differences. A factor analysis of ratings on the ten scales yielded highly similar patterns for these two concepts. The largest factor consisted of scales 3, 5, and 6 (exciting, enjoyable, interesting); the next largest, scales 1 and 10 (useful, important); then scales 2 and 8 (clear, easy); scale 9 by itself (definite); and scale 7 (good-bad), which also had small loadings on the first three factors mentioned.

General Conclusions on Course Evaluation

In this chapter and in the accompanying appendixes, a variety of results has been presented and reviewed. The results on achievement show that the students, on the whole, did fairly well but still have some distance to go toward the higher-level objectives. The results also show considerable variation within groups, and to some extent between groups, so that precise generalizations about actual and expected levels of accomplishment are impossible to make. Some groups--those of superior scholastic ability and superior scholarship--did well indeed, considering that this was a first trial for the teacher. There can be little doubt that this kind of economics course is appropriate for them at the ninth-grade level. Other groups, less able academically, did well at their level and also gave evidence of liking the course as well as the abler groups. So it would be hard to say that economics is not appropriate for them. A good teacher should be able to make this course interesting and profitable for ninth-grade students in the typical range

of general ability. There was evidence for that in this Project. But ninth-grade students may not reach the higher levels of sophistication, such as the appreciation of the unfolding structure, without a more diligent effort, a longer period of time for the abstractions to get through, and teachers who are experienced in and dedicated to teaching such a course.

CHAPTER V

THE RELEVANCE OF THE PROJECT TO THE SOCIAL STUDIES CURRICULUM

From the foregoing chapters it should be apparent that the preparation of the economics curriculum materials has been guided by two main considerations--a strict adherence to a structure of economics as a discipline and the use of the discovery approach as the most effective means of aiding students to acquire an understanding of a structure of economics. The emphasis upon a structured approach involved the development of materials which would form an unfolding sequence of economic concepts, while the emphasis upon discovery involved minimizing the teacher's role as didactic instructor and maximizing the student's role as investigator. The overall approach may be termed the structure-discovery approach.

This concluding chapter will differentiate between the discipline-centered approach and the subject-centered approach in the social studies curriculum and suggest ways in which these materials may be used in the social studies curriculum of the secondary schools. It will also consider some of the implications which these materials have for teacher preparation and teacher status.

It should be understood that the discipline-centered approach to the study of economics or other social science disciplines is not the equivalent of "the subject-centered approach". Although both approaches

do indeed lay stress upon the importance of content, the former implies the logical progression of unfolding ideas and concepts within a given discipline while the latter tends to ignore the logical relationships of ideas and concepts and often emphasizes instead a series of isolated facts, unrelated to concepts, which should be committed to memory. Student competence in the use of economics analysis in the analysis of societal problems, not the ability to repeat from memory economic facts, has been a major thrust of this project. In addition, the emphasis upon discovery on the part of the student is designed to develop individuals who are capable of independent thinking and who can reflectively examine their beliefs-- modifying or affirming them on the basis of evidence arrived at through their skill in economics analysis.

In summary then, we have chosen to stress the structure-discovery approach to the study of economics because of our belief that this approach is an effective way of acquiring understanding of an unfolding structure of the discipline of economics. It is also our belief that because of the present state of economics analysis and its direct relevance to the students' lives, it offers unique opportunities for developing student capacity for reflective thought.

This concern with the relevance of the discipline of economics to the students' understanding of the world in which he must live led to the development of Unit 18 which should be viewed as an example of the kind of unit which attempts to span the distance between economics studied as an academic discipline and economics used in the analysis of societal problems. Used in this way the economics course based on the materials produced by the Economics Curriculum Project becomes one among

other structured courses in the secondary school curriculum. The goal of these courses would be the development of individuals who have an understanding of the structure of the various disciplines and who show competence in the analysis of economic, political and social problems in an historical or current context. Such courses would also provide students with the opportunity to reflectively examine their own economic, political and social beliefs. This examination of personal values or societal problems would take place at the latter part of each discipline-oriented course as was done in Unit 18 of the economics materials.

Another use of these materials in the social studies curriculum is to view the economics course as one among a series of structured courses (political science, economics, sociology, anthropology) which eventually lead to an integrated interdisciplinary course. Such an integrated course might be developed around several alternative approaches: students could use their analytical skills and conceptual insights (attained in their study of the various disciplines) in the analysis of broad societal problems such as those encountered in a study of technological changes, conservation of resources, population growth, and urbanization. The students' skills in the use of social science concepts and analysis might also be used within the context of a world civilization course in which they would hopefully enlarge their understanding of the world by adding economic, sociological and anthropological dimensions to the basic political and chronological approach.

The foregoing by no means exhaust the alternative ways in which these economics materials (and those developed around the other social science disciplines) may be used within the social studies curriculum.

They are merely suggestive of the possibilities and stress the flexibility of the materials. One word of caution, however, should be added: it has been the assumption of the Project staff that the structure and logical unfolding of economic concepts enhances the learning process and that any approach which tends to break this unfolding process (e.g. a current affairs orientation) should be avoided. This does not imply that there is no place in the social studies curriculum for courses oriented to current affairs, or to broad topics or problems. It does mean that every effort should be made to preserve the structure of the discipline during the teaching of this course. Once the structure-discovery approach is understood it is to be hoped that current affairs and social problem oriented courses will be more meaningful to the students.

Because of the similarity of the discipline-centered approach to subject-centered approach there is great danger that in the hands of teachers who are unaware of the need for reflective thinking, discipline-oriented materials may become a series of dreary, inert exercises in the recitation of memorized structure. To help prevent this and to promote effective teacher use of these materials, it will be necessary to give present and future teachers training which emphasizes the structure-discovery approach to the study of economics and the other social sciences.

The very nature of the current project's stress upon the structure of the discipline implies a special concern with adequate teacher grounding in the content of economics. It is necessary to emphasize that the preparation of social studies teachers requires a different orientation than that required for the preparation of economic specialists.

This is not meant as denigration of content courses as such, but simply points to the fact that the objectives of the secondary school teacher are different from those of the academic specialist.

It is the opinion of the writers that adequate preparation of prospective teachers does not merely consist of "hours" taken in economics courses. Instead, the main emphasis should be placed upon having prospective teachers take courses which are explicitly oriented toward a structured approach to economics. This presupposes that those who teach economic structure to secondary teachers will have dual competence as experts in the discipline and as educators. They should also be sensitive to the pedagogical problems of teaching economics at the secondary level.

It is apparent, too, that prospective teachers must be able to think reflectively if they are to encourage this type of thinking in their students. Knowledge of content alone is no guarantee of their ability to participate in the reflective analysis of social and economic problems. College courses should be designed so that prospective teachers will have the opportunity of reflectively examining their own economic beliefs and values. In addition to competence in his area of specialization, the teacher must have some competence in handling the structures of the other social sciences--a competence gained by teacher participation in the discovery of these respective structures.

The use of the economics materials by the schools will entail re-training and reorientation of present teachers. Once again, the stress must be placed not on the quantity of course work taken but upon the quality of such courses as measured by their adherence to the

structure-discovery approach. The materials themselves are of such a nature that they may be used in a program of in-service training to aid the teacher gain competence in handling a structural approach to the teaching of economics. Used in the re-training of teachers these materials may be viewed as an open-ended starting point which, rather than replacing the teacher with a package of teaching aids, actually encourages him to become professionally involved in the development of curricular materials. One way of involving the teachers would be by having them participate in a two or three week orientation program conducted by persons who are thoroughly familiar with the structure-discovery approach to the teaching of economics. Such an orientation should acquaint teachers with an unfolding overview of the course and give them an opportunity to prepare in detail a number of learning situations to be used as alternatives to those presented in the materials. Practice in the adaptation of the materials under the guidance of qualified personnel would reduce the possibilities of future teacher adaptations which might violate the structure-discovery approach. This orientation program should also include a series of seminars for teachers where they would examine in detail the structure-discovery approach and related economic concepts.

The emphasis upon open-ended teaching materials has been intentional and is meant as an antidote for the tendency of curriculum projects to prepare materials which the teacher transmits <u>in toto</u> to the students. The project staff has never taken the position that the materials produced by the Economics Curriculum Project would by the final work in economic education. The successful use of the materials

will require teachers who are reflective and informed. The materials are not meant to be a short cut formula which will allow anyone to teach economics. Such an approach would be incongruous with the notion of the discipline from which the materials are derived. It would also cast the teacher in the role of an adopter of materials created for him by far-removed experts and reduce his own opportunities to innovate. The project staff has made every effort to avoid the stance of dispensing economic truth packages to incompetent teachers. The knowledgeable and confident teacher has been the focus of our activities. We believe that teacher control of the innovation procedure coupled with project materials which are designed for adaptation, not simply adoption, yields the most effective program for implementing the materials produced by national curriculum projects and for enhancing the professional status of teachers. These materials are offered in the hope that the teacher will not feel bound by them but will feel free to adapt them to his own particular needs. The only restriction placed upon the teacher should be that he adheres to the basic structure-discovery approach and the implications of this approach outlined earlier in this chapter.

APPENDIX A

OBJECTIVES OF THE LEARNING SITUATIONS[1]

Unit 1 - Definition of Scarcity

Situation 1 - Needs and Wants

To distinguish between needs and wants. (K 1.11)

Situation 2 - Goods and Services

a. To distinguish between goods and services. (K 1.11)

b. To classify goods and services into those intended for consumer and those intended for producer. (K 1.23)

Situation 3 - Concept of Scarcity

a. To recognize that scarcity is a universal condition of man. (K 1.31)

b. To distinguish between total scarcity and relative scarcity. (K 1.11)

c. To translate into symbolic form the mathematical verbal definition of scarcity as an inequality relationship. (C 2.10)

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[1]These stated objectives have been tentatively classified into categories of the Taxonomy of Educational Objectives, Handbook I: Cognitive Domain, edited by B. S. Bloom (New York: David McKay, 1956). The letter and number refer to this classification. It should be understood that each objective may be prefaced by the expression, "The student should be able"; also that "recognize" does not convey the extent of knowledge and understanding desired. An expression such as "recognize, state, and explain" would come closer to the intended objective in each such instance.

Situation 4 - Self-Evaluation[2]

To translate given data about total and relative scarcity from symbolic form into a mathematical verbal context. (C 2.10)

Unit 2 - Definition of Factors of Production

Situation 1 - What are the Factors of Production?

a. To recognize that the scarcity of goods and services is due to the scarcity of the factors used to produce them. (K 1.31)

b. To arrange and combine the factors necessary for the operation of a small enterprise in order to explain the process of production. (S 5.30)

c. To translate one's classification system for the factors of production into those categories conventionally used by economists. (C 2.10) (K 1.23)

Situation 2 - Human and Natural Resources

a. To develop a definition of the term "resource". (K 1.11)

b. To recognize that the classification of a physical substance as a natural resource is dependent upon existing technology, geographic location, and the existing wants of human beings. (K 1.31)

Situation 3 - Capital

To distinguish between real capital and money capital. (K 1.11)

Situation 4 - The Entrepreneur

To define the role of the entrepreneur as a factor in the production process. (K 1.31)

Situation 5 - Government as a Factor of Production

To define the role played by certain government services in the production process. (K 1.31)

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[2]Situation 3 and Situation 4 have been combined in the revised materials.

Situation 6 - Self-Evaluation[3]

To describe a local business firm on the basis of its use of the factors of production. (Ap 3.00)

Unit 3 - What to Produce?

Situation 1 - The Decision about What to Produce

a. To recognize that the scarcity of the factors of production forces men to make decisions about what to produce. (K 1.31)

b. To recognize that every society must decide what proportion of the available factors of production it desires to allocate to the production of consumer goods and services and what proportion to allocate to the production of producer goods and services. (K 1.31)

c. Given hypothetical units of factors of production, to allocate these between various goods and services so that one can recognize the implications and consequences of various decisions about what to produce. (C 2.30)

Situation 2 - Discussion of Present versus Future Goods

a. To make a sequence of decisions about what to produce under a given set of conditions. (S 5.20)

b. To create a rationale for the choices made in (a). (S 5.30)

Situation 3 - The Market Economy - A System of Signals

To recognize the market system as a theory of the way decisions about what to produce are made in the United States. (K 1.32)

Unit 4 - Allocating the Resources

Situation 1 - Changing Wants

To recognize that changes in human wants require changes in the allocation of resources. (K 1.31)

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[3]Situation 5 and Situation 6 have been combined in the revised materials.

Situation 2 - Mobility of Resources

To recognize that in a market economy, prices, geographic location, skills, and other social-psychological factors all influence the mobility of resources. (K 1.31)

Unit 5 - Stimulating Efficiency

Situation 1 - Definition of Efficiency

a. To recognize that the scarcity of resources in a society promotes the desire to use them efficiently. (K 1.31)

b. To distinguish between gains in production and gains in productivity in accounting for increased production within a society. (K 1.11)

c. To translate into symbolic form the mathematical verbal definition of efficiency. (C 2.10)

d. To apply to concrete situations the formulas for calculating gains in production resulting from increased efficiency. (Ap 3.00)

Situation 2 - Specialization

a. To recognize that specialization is a means for increasing total output without increasing total input. (K 1.31)

b. To check the consistency of the hypothesis that specialization under the conditions of equal advantage or comparative advantage between two producers leads to gains in productivity. (An 4.20)

c. To recognize that gains in productivity because of specialization are limited by social-psychological restraints. (K 1.31)

Situation 3 - Gains in Efficiency from Scale of Production

To recognize that increasing the scale of operation, within limits, leads to greater efficiency in the use of resources. (K 1.31)

Situation 4 - Motivation to be Efficient

a. To recognize that the desire on the part of individuals to be efficient is a basic requirement in any society that desires the greatest utilization of its resources. (K 1.31)

b. To recognize that if a society desires efficiency, it must provide incentive for its members to be efficient. (K 1.31)

Unit 6 - Dividing the Goods and Services

Situation 1 - Ways of Dividing Goods and Services Among Consumers

a. To recognize that no society produces enough goods and services to satisfy all the wants of its members; therefore, every society must have some means of deciding who gets what. (K 1.31)

b. To recognize that (1) every society distributes its production by one or more of the following methods: (a) equally among all members, (b) by the status of the individual, (c) by an individual's ability and willingness to buy; and that (2) in most societies, one of the three methods predominates. (K 1.31)

c. To apply to concrete situations these facts about methods of distribution. (Ap 3.00)

Situation 2 - The Ability and Willingness of Consumers to Buy

a. To recognize that in a market economy, the distribution of goods and services is predominantly based on an individual's ability and willingness to buy. (K 1.31)

b. To derive the proposition that as an individual's income changes, his willingness to buy various goods and services also changes. (C 2.20)

Situation 3 - The Businessman as a Buyer of Goods and Services

a. To recognize that the factors which influence the consumer's ability and willingness to buy differ from those which influence the businessman. (K 1.31)

b. Within the context of a given situation, to extend the given data in order to determine the implications and consequences of a businessman's decision to make a change in production. (C 2.30)

Unit 7 - Definition of Flows

Situation 1 - Introduction to the Two Related Flows

a. To recognize that societies do not make the four basic economic decisions as separate decisions but that these decisions are interwoven in a dynamic relationship. (K 1.31)

b. To recognize the conception of flows (flow of goods and services and flow of money) as a theoretical construct for explaining the dynamic interaction of economic events. (K 1.32)

c. To recognize that income generated is equal to the value added in the process of producing goods and services. (K 1.31)

d. Given hypothetical data about costs of production, to determine the value added at each stage of production, and to indicate the direction of the two flows. (Ap 3.00)

Situation 2 - The Twin Flows - A Simplified Model[4]

a. To recognize that some degree of balance must exist between the two flows in order to provide a continuity of economic activity. (K 1.31)

b. To recognize that the equality between total income generated and total value added which holds in the production of a single product also applies in the aggregate production of a society. (K 1.31)

c. To derive original explanations of the means by which the continuous nature of the interacting flows are perpetuated. (S 5.10)

Unit 8 - Measuring the Nation's Income

Situation 1 - Changing Prices and the Value of Money

a. To recognize that measuring changes in the performance of the economy as changes in the level of GNP requires adjustment of the GNP to compensate for any changes in the level of prices that may have occurred. (K 1.31)

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[4]Although the objectives remained the same in the revised materials, the setting within the learning situation was changed.

b. To recognize that the value of money is inversely proportional to the level of prices. (K 1.31)

Situation 2 - Extablishing a Price Index

a. To explain the use of the price index which economists have developed for making adjustments in GNP for changes in prices. (K 1.25)

b. To apply the procedure of adjusting for price changes to hypothetical GNP figures. (Ap 3.00)

Situation 3 - Comparing GNP's in Terms of Constant Dollars

a. To apply the procedure of adjusting for price changes to actual GNP figures for the United States. (Ap 3.00)

b. To interpret trends in the GNP for the United States when the GNP's are stated in constant dollars. (2.20)

c. To recognize that the use which will be made of the compared GNP's determines the selection of the base year to be used in making the adjustment for price changes. (K 1.31)

Unit 9 - Definition of Economic Growth

Situation 1 - The Problem of Measuring Economic Growth

To recognize that comparisons of constant GNP figures for two widely separated years do not give an indication of qualitative changes in the products that may have taken place. (K 1.31)

Situation 2 - Measuring Economic Growth in Terms of Population

a. To calculate the constant GNP per capita for a given year from the relevant data. (K 1.25)

b. To recognize that a steady increase in adjusted per capita GNP is an indication of economic growth in a society. (K 1.31)

Situation 3 - Economic Growth - Inputs and Efficiency

a. To recognize that an increase in adjusted per capita GNP is caused by gains in production, gains in productivity, a reduction in the size of the population, or by some combination of these events. (K 1.31)

b. To recognize that the calculation of output per man-hour for two different years provides a method of determining the kind of economic growth that has occurred. (K 1.31)

c. To make a reasoned guess as to whether changes in inputs or in efficiency primarily account for changes in output over a given period. (C 2.30)

d. To apply in a concrete situation the concept of output per man-hour in order to determine the nature of economic growth. (Ap 3.00)

Unit 10 - Composition of the GNP

Situation 1 - The Four-fold Division

a. To recognize that a change in the economic activity of one sector produces a change in the activity of at least one other sector. (K 1.31)

b. To know the conventional method used by economists to analyze the sources of change in the size of the GNP. (K 1.25)

c. To know the categories (sectors) used by economists for analyzing changes in the flows of economic activity. (K 1.23)

Situation 2 - Consumer Sector

To define personal income, personal savings, and disposable personal income. (K 1.11)

Situation 3 - The Business Sector

To develop original classification schemes for describing the flows into and out of the business sectors. (S 5.30)

Situation 4 - The Government Sector

To develop categories for explaining the flows into and out of the government sector. (An 4.20)

Situation 5 - The Foreign Sector

To apply the conception of inflows and outflows learned in relation to the domestic economy to the relationships existing between the domestic economy and the foreign sector. (Ap 3.00)

Situation 6 - Spending, Saving and Investing

a. To distinguish the terms spending, saving, and investing as used by economists. (K 1.11)

b. To explain the growth experienced by a hypothetical economy by means of national-income accounts. (Ap 3.00)

c. To compute a National-Income Analysis for a hypothetical economy from a set of relevant data. (C 2.10)

Unit 11 - Determining the Nation's Income

Situation 1 - Relating the Two-fold and Four-fold Divisions

To recognize that the GNP can be expressed as a two-fold relationship (producer and consumer goods and services produced during a given year) or as a four-fold relationship (consumption expenditures, government expenditures, investments, and foreign expenditures and investments during a given year), depending upon the analytical purposes that are required. For example, the student should know that the four-fold division is the scheme used by economists to explain how changes in the composition of the flows can determine changes in the size of the flows. (K 1.23)

Situation 2 - Disequilibrium, an Imbalance between Savings and Investment

a. To recognize that in most industrially advanced countries the flows are not perfectly matched in a given year. (K 1.22)

b. To recognize that the mismatching of flows (disequilibrium) results from an imbalance between savings and investment. Savings and investment for a given year are usually equal only in an accounting sense; that is, they are postulated as being equal by definition. (K 1.31)

c. To become familiar with more complex models of analysis to explain economic growth than the simple ones so far treated. (K 1.25)

Situation 3 - Disequilibrium and the Multiplier

a. To recognize that the kind of disequilibrium in an economy determines the effect of a change in demand. (K 1.31)

b. To explain the theory of the "multiplier", i.e. that a change in the demand of one sector in the economy may generate changes in the demand of other sectors that are greater in total magnitude than the original change. (K 1.32)

c. To translate into symbolic form the mathematical verbal relationships of multiplier theory. (C 2.10)

d. To apply to concrete situations the formulas derived from the multiplier theory. (Ap 3.00)

Situation 4 - Growth and Stability[5]

To explain the relationships between the different forms of disequilibrium and their implications for economic growth and stability in the society. (K 1.32)

Unit 12 - Role of Money and Financial Institutions

Situation 1 - The Functions of Money[6]

a. To recognize that money is a social invention and that consequently the functions and types of money in an economy are dictated by the need of the society. (K 1.31)

b. To recognize that since money serves various functions in a society, societies generally use different kinds of money to serve the various functions, i.e. coins, currency, and checks. (K 1.31)

Situation 2 - Financial Institutions

a. To recognize that the flow of money in a society is facilitated by the creation of institutions to manage the flow of money. (K 1.31)

b. To recognize that banks and other financial institutions are social inventions. (K 1.31)

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[5]Situation 4 was eliminated in the revised materials.

[6]Although the objectives remained the same in Situation 1, the revised materials presented them in a different manner.

Situation 3 - A Flexible Money Supply[7]

To recognize that an industrially advanced economy needs flexibility in the money supply. (K 1.31)

Unit 13 - Monetary and Fiscal Policies (unrevised materials)

Situation 1 - Flexibility of the Money Supply and the Creation of Money

a. To recognize that societies that desire economic growth need flexibility in the supply, velocity, and direction of money. (K 1.31)

b. To recognize that banks and other financial institutions can expand and contract the supply of money by influencing its velocity and direction; that is to say, banks and other financial institutions provide a means for obtaining a flexible money supply. (K 1.31)

Situation 2 - Regulating the Money Supply

a. To recognize that too much expansion or contraction of the money supply contributes to instability or the reduction of economic growth in a society. (K 1.31)

b. To apply the procedure for calculating the amount of expansion of the money supply possible under given reserve requirements. (Ap 3.00)

c. To analyze the relationship between economic goals and flexibility of the money supply within a society. (An 4.20)

Situation 3 - Growth, Stability and the Money Supply

To apply knowledge of alternative Federal Reserve policies to the formulation of policy choices in various given economic situations. (Ap 3.00)

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[7]Situation 3 is an addition in the revised materials.

Unit 13 - Monetary and Fiscal Policies (revised materials)[8]

Situation 1 - A Flexible Money Supply

To recognize that societies that desire economic growth need flexibility in the supply, velocity, and direction of money. (K 1.31)

Situation 2 - The Fed in Action

a. To explain how the policies of the Federal Reserve System can influence the expansion and contraction of the money supply. (K 1.32)

b. To apply the definition of the term "discount" to the actions of both private banks and the Federal Reserve. (Ap 3.00)

c. To explain the relationships involved in the Open Market Operations of the Federal Reserve System. (K 1.31)

Situation 3 - The Relationship between Monetary and Fiscal Policies

a. To recognize that too much expansion or contraction of the money supply contributes to instability or the reduction of economic growth in a society. (K 1.31)

b. To apply the procedure for calculating the amount of expansion of the money supply possible under given reserve requirements. (Ap 3.00)

c. To analyze the relationship between economic goals and flexibility of the money supply within a society. (An 4.20)

d. To apply knowledge of alternative Federal Reserve policies to the formulation of policy choices in various given economic situations. (Ap 3.00)

Unit 14 - International Trade

Situation 1 - An Expanded Conception of Exports and Imports

a. To extend one's knowledge of domestic flows to an analysis of international flows. (C 2.30)

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[8]Although the objectives often remained the same in the revised materials, the presentation differed.

b. To define exports, imports, receipts, and payments. (K 1.11)

c. To apply the accounting procedure of economists to the analysis of the balance of payments. (Ap 3.00)

Situation 2 - The Balance of Payments

a. To recognize that an economy can have an excess of the value of its exports over the value of its imports and still have an unfavorable balance of trade. (K 1.31)

b. To interpret data on balance of payments with reference to the social goals of a society. (C 2.20)

Situation 3 - The Importance of International Trade

a. To recognize that international trade tends to facilitate the most efficient utilization of a nation's resources. (K 1.31)

b. To recognize that the kinds of goods and services exchanged by nations is as important for an understanding of international trade as an examination of the total value of the goods and services exchanged. For example, the importance of an import or export cannot be measured by its dollar value alone. (K 1.31)

Unit 15 - Types of Economic Systems

Situation 1 - A Traditional Economy

a. To recognize that every society must devise a system for coordinating the flows of economic activity to meet its particular conditions of scarcity. (K 1.31)

b. To distinguish between a traditional economy and a market economy. (K 1.11)

Situation 2 - The Emergence of a Market Economy

a. To recognize that an increase in specialization and trade brought with it the development of the market economy. (K 1.31)

b. To recognize that in a market-oriented economy individuals decide by their purchases what the allocation of resources in their society will be. (K 1.23)

Situation 3 - The Planned Economy

a. To distinguish between a planned economy and a market economy. (K 1.11)

b. To recognize that the categories of a market and a planned economy are not mutually exclusive. For example, most market-oriented economies make some use of central planning and most planning-oriented economies make some use of markets in the allocation of resources. (K 1.12)

Unit 16 - Basic Economic Decisions in Market and Planned Economies

Situation 1 - The Variety of Market Supply Situations

To recognize and explain the varying degrees of competition existing within various industries in a community. (K 1.23 and Ap 3.00)

Situation 2 - Market Variety

a. To recognize the conventional classification of United States markets, i.e. (1) perfect competition, (2) imperfect competition, (3) oligopoly, and (4) monopoly. (K 1.11 and K 1.23)

b. To recognize that even a predominantly market economy such as that of the United States does not perfectly fit the basic notion underlying its economic organization. In a sense, every economy is a mixed one. (K 1.31)

Situation 3 - Comparing Decisions in Two Economic Systems

a. To recognize that although the same basic economic decisions must be made in both a planned and a market economy, there are different institutions for making such decisions. (K 1.31)

b. To recognize that although there are markets in both a market economy and a planned economy, they serve different functions. (K 1.31)

Unit 17 - Economy and Government

Situation 1 - The Role of Government in the Market Economy

a. To recognize that the social goals of a society determine the role that government plays in striving for the economic goals of the society. (K 1.31)

b. To recognize that in a market economy, government sets the rules for economic behavior, checks abuses and violations of the rules, and provides policies for guiding the flows of economic activity through markets toward growth, stability, and equity. (K 1.31)

Situation 2 - The Role of Government in a Planned Economy

To recognize that in a planned economy, government sets the rules for economic behavior, checks abuses and violations of the rules, and provides policies for directing the flows of economic activity through a central plan toward growth, stability, and equity. (K 1.31)

Situation 3 - Social Expenditures

a. To recognize that both the extent and the intent of social expenditures vary between a market and a planned economy. (K 1.31)

b. To recognize that the general intent of social expenditures in a market economy is to provide for the general welfare when private enterprise is unwilling or unable to do so. (K 1.31)

c. To recognize that the general intent of social expenditures in a planned economy is to provide an increased amount of government control over the economy in order to facilitate the implementation of the central planning. (K 1.31)

Unit 18 - Economic Problems and Policies

Situation 1 - Agriculture--"Problems" and Policies

a. To recognize that economic "problems" such as the so-called problem of agricultural surpluses are actually breakdowns in the economic coordination-system of a society. (K 1.31)

b. To recognize that political and social decisions in the United States have restricted the reallocation of resources from agriculture to other industrial uses, thus causing a dislocation or breakdown in the coordination of economic activity. (K 1.31)

c. To develop a policy proposal for meeting the agricultural problem in the United States by relating one's conception of social values to the relevant economic data. (S 5.30)

Situation 2 - Monopoly

a. To recognize that an adequate analysis of an economic "problem" requires the application of the analytical relationship within the discipline of economics and implications from the structures of other disciplines. (K 1.31)

b. To analyze the problem of imperfect competition in a market economy as evidenced historically in legislation, and to analyze the interaction between legislation and economic policy with regard to the problem of monopolies. (An 4.20)

Situation 3 - Poverty and Insecurity

a. To recognize that a systematic use of the structure of economic analysis provides a means for clearly locating breakdowns in economic coordination. (K 1.25)

b. To recognize that systematic analysis increases the probability of finding creative solutions to breakdowns in coordination. (K 1.25)

c. To know the model for scientific investigation in economics presented in the materials and to apply the model to the problem of poverty and insecurity in the United States. (K 1.25 and Ap 3.00)

APPENDIX B

STUDENT INFORMATION FORM

Name _____ Date _____
(Print) Last First Middle Mo. Day Year

Age _____ Date of Birth _____ Boy ☐ Girl ☐
Mo. Day Year

Home Address _____
Street & Number City State

Home Telephone _____
Name of Present School _____
Name of Previous School _____
Name of Present Homeroom Teacher _____
Name of Teacher in This Subject _____

Please check which one of the following high school programs or curriculums is most like the one that you are taking. If you have not yet been assigned to a program, check which one you expect to take.

___A. General--a program that does not necessarily prepare you either for college or for work, but in which you take subjects required for graduation and many subjects that you like.
___B. College Preparatory--a program that gives you the training and credits needed to work toward a regular Bachelor's degree in college.
___C. Commercial or Business--a program that prepares you to work in an office; for example, as a secretary or bookkeeper.
___D. Vocational--a program that prepares you to work in a shop or factory, or to enter a trade school, or become an apprentice after high school.
___E. Agriculture
___F. A program very different from the above. Please describe briefly:
_____

Name the school subjects in which you have been:
Most interested _____
Least interested _____

In general, do you like academic or non-academic subjects best?
Check one: _____academic _____non-academic.

Note: Academic subjects are those like English, foreign languages, history, social studies, mathematics, and science.
Non-academic subjects are those like art, home economics, music, physical education, shop work, and typewriting.

OPINIONS ABOUT OUTCOMES OF ECONOMICS

The statements below describe nine possible outcomes that students might get from their study of economics. Please read over the list and try to decide how important each outcome is to you personally. Use the rating scale below to form your judgment of importance. To the left of each statement, record your rating by writing in the number of the scale value corresponding to your judgment. Rate all the possible outcomes. Please be honest in your judgments. They will not affect your standing in this course in any way.

Rating Scale:
5--very important to you
4--fairly important to you
3--a little important to you
2--hardly important to you
1--not at all important to you

Remember, 5 is the high end of the scale; 1 is the low end!

Rating	List of Possible Outcomes
____a.	Learn how to analyze and weigh arguments that deal with economics--for example, a newspaper editorial arguing for less spending by the Federal Government.
____b.	Learn how economics can be helpful in planning and managing one's own financial affairs.
____c.	Learn basic principles that help to explain certain economic conditions like business depressions or that help to make predictions as to what may happen if certain changes are made in a situation.
____d.	Learn definitions of basic economic terms.
____e.	Learn how to read and interpret economic data--facts, figures, and trends as presented in tables, charts, graphs, etc.
____f.	Learn how the subject of economics can be analyzed into a series of interrelated ideas, each of which builds on the earlier ideas and forms the basis for the later ones.
____g.	Learn the reference sources where economic facts and figures can be located--for example, official governmental reports on employment, etc.
____h.	Learn important factual knowledge in economics.
____i.	Learn how economics can be applied to the study of important social problems in this country.

QUESTIONNAIRE ON STUDY HABITS[1]

Below is a list of statements that we would like you to consider. Try to decide how much each statement applies to you--how true it is of yourself. Use the numbers below to record your judgments. Write one of the numbers in the space to the left of each statement. Please be honest in your judgments. They will not affect your standing in this course in any way.

Write:
5--if <u>very</u> true of yourself
4--if <u>fairly</u> true of yourself
3--if <u>a little</u> true of yourself
2--if <u>hardly</u> true of yourself
1--if <u>not at all</u> true of yourself

____1. When you know there are going to be one or two questions on an examination from outside reading assignments, you always read <u>all</u> the material.
____2. You regard yourself as a more consistent and harder worker in your classroom assignments than the typical students in your classes.
____3. Others (not your good friends) have thought of you as one who "missed some of the fun" because you were so serious.
____4. You think your fellow students in school think of you as a hard worker.
____5. Most of your teachers probably think of you as one of their hardest workers even though not necessarily one of the smartest.
____6. Other interests (sports, extra-curricular activities, or hobbies) prevent you from obtaining an excellent rating or mark for <u>effort</u> in school work.
____7. You have a very strong desire to excel academically.
____8. You try harder to get on the school honor roll or merit list than the average student in your class.
____9. You try to do most jobs at least a little better than what you think is expected.

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[1]Special thanks are due Dr. Albert E. Myers for permission to adapt his version of an achievement motivation scale developed at Educational Testing Service. See <u>Educational and Psychological Measurement</u>, 25 (1965), 355-363.

APPENDIX C

MULTIPLE-CHOICE TESTS USED IN PROJECT, TOGETHER WITH SELECTED STATISTICAL TABLES

Course in Economics: Multiple-choice Test, Units 1-6

Directions: Fill out the information called for on the separate answer sheet. When your teacher tells you to begin, go ahead with this part of the test. Choose the best answer in each item and record your answer on the separate answer sheet after the appropriate item number.

1. Satisfying a person's desire through providing a service is the main work of a
   a. manufacturer.
   b. grocer.
   c. druggist.
   *d. barber.

2. Satisfying human desires through providing goods is the main work of a
   a. doctor.
   b. telephone repairman.
   *c. farmer.
   d. policeman.

3. Not having enough of everything that would satisfy all the desires of everyone is called
   a. maximum scarcity.
   b. general scarcity.
   c. relative scarcity.
   *d. total scarcity.

4. Which of the following is an example of consumers' goods?
   a. a plumber's tools.
   *b. a housewife's coat.
   c. a stenographer's typewriter.
   d. a professional dancer's shoes.

5. "Human resources" refer to
   *a. human abilities used in production.
   b. resources used by human beings.
   c. any natural resources belonging to human beings.
   d. resources which supply wants and needs of human beings.

6. "Entrepreneur" means
   a. a particular kind of business.
   *b. the proprietor of a business.
   c. any executive of a business corporation.
   d. a producer.

7. The first decision that must be made because of scarcity is
   a. what resources can be used.
   b. which resources are the least scarce.
   c. what can be produced from the resources available for use.
   *d. what is to be produced.

8. Consumer goods and services are considered goods and services for the present because
   *a. they are produced for immediate consumption.
   b. consumer demand for particular goods and services changes so rapidly that it isn't practical to produce for the future.
   c. their purpose is directly concerned with satisfying needs and wants rather than having anything particularly to do with the future.
   d. consumer goods and services are wanted only in the present.

9. The money used to obtain more producer goods and services usually comes from
   *a. savings from income acquired through the sale of consumer goods and services.
   b. income from the sale of producer goods and services no longer needed.
   c. special grants by the government.
   d. money saved through using new producer goods and services that are more efficient.

10. In the U. S. the majority of decisions about what to produce are made through
   a. the manufacturers.
   b. government.
   c. tradition.
   *d. consumer purchases.

11. Net investment in the technical sense always takes place when
   a. persons buy the stocks and bonds of corporations.
   *b. the amount of producers' goods is increased.
   c. new durable goods are bought by families.
   d. families try to save part of their incomes.

12. The main reason why the decision of How to Allocate the Resources is necessary is that
    *a. scarcity makes it important to put resources to just those uses which are most wanted.
    b. allocating the resources is a part of any production-operation plans.
    c. a producer has to plan how resources are to be used for production to get started.
    d. deciding how resources need to be allocated makes it known if there are enough resources available.

13. The main reason why mobility of resources is required is that
    a. the value of a resource is determined by its mobility.
    b. a producer needs to cut production costs by putting a factor to as many uses as possible.
    *c. changing consumer wants requires changes in allocation.
    d. the population tends to be on the move.

14. The real cost to society of any commodity produced is
    a. the energy expended on it.
    b. the value of the raw materials in it.
    *c. the value of an alternative commodity given up.
    d. the resultant depreciation in capital goods.

15. Resources allocated by supply and demand go to those uses which
    *a. pay the highest price(s) for them.
    b. are not easily supplied by the needed resources.
    c. demand the most resources.
    d. have been in existence the longest.

16. The next logical question after deciding how resources are to be used in order to carry out the decision of what is to be produced is
    a. how to get the money to start production.
    b. what kind of method is to be used for distributing the goods and services.
    *c. how to use the resources in order to get the most out of them.
    d. what members of society are to get the goods and services.

17. Productivity means
    a. a given amount of output less a given amount of input.
    *b. the relationship between output and input.
    c. the amount of input used in production.
    d. the same as production--the amount of goods and services produced.

18. The most important reason for being efficient is that
    a. it is through being efficient that a society has more money.
    b. it is evidence of good business practice.
    c. it contributes to the financial stability of the society.
    *d. it makes scarce resources go farther.

19. It is important for a society to decide how to divide goods and services among its members. The main reason is that
    a. producers have to get their products to consumers.
    b. there must be a way for consumers to get the goods and services they need and want.
    *c. since there are not enough goods and services for all, it must be decided just who will get them.
    d. only as goods and services are divided among consumers will there be a demand for further production.

20. Three of the following are usual ways of dividing goods and services. Which one is <u>not</u> a usual way?
    a. Goods and services are distributed to everyone alike.
    *b. Goods and services go to those who need them most.
    c. Both the order of those getting goods and services as well as the amount they get are determined by social position.
    d. Goods and services go to the ones who are able and willing to buy.

21. All three methods for dividing goods and services are used in varying degrees
    a. only in a capitalist society such as the U. S.
    b. only in a socialist society.
    c. only in a communist society.
    *d. in all societies.

22. The predominant method for dividing goods and services in the U. S. is to
    *a. divide them among those who can and will buy them.
    b. divide them on the basis of social standing.
    c. distribute them to those who can afford them.
    d. distribute them equally.

Course in Economics: Multiple-choice Test, Units 7-11

Directions: Fill out the information called for on the separate answer sheet. When your teacher tells you to begin, go ahead with this part of the test. Choose the best answer in each item and record your answer on the separate answer sheet after the appropriate item number.

Begin with item 23 on the answer sheet (where we stopped on the previous test).

Note: Items 23-26 go together.

23. John built a model airplane. The wood and glue cost him $1.50. John feels that his labor is worth $.50. He sells the plane to Harry for $2.50. What is the value added?
a. $.50 *b. $1.00 c. $2.00 d. $2.50

24. Harry paints the plane and sells it to Pete for $3.00. The paint cost Harry $.15. What is the value added?
a. $.15 *b. $.50 c. $1.00 d. $3.00

25. What is the total value of the plane?
a. $2.15 b. $2.65 *c. $3.00 d. $5.50

26. What is the total income created?
a. $1.35 *b. $3.00 c. $5.50 d. $7.00

Note: Items 27 and 28 refer to the following table.

Item	Year 1	2
tennis racket	$12	$ 7
local camping trip	18	23
radio	20	24
dress	10	21
suit	15	50
Total	$75	$125

27. What is the average price level for year 2?
a. $15 *b. $25 c. $75 d. $125

28. Using year 2 as the base year, find the price index for year 1.
*a. 60 b. 67 c. 125 d. 167

29. The Consumer Price Index for 1957 is about 120, using 1947-1949 as the base year. Find the adjusted GNP if the unadjusted GNP is about 480 billion dollars.
a. 360 billion dollars
b. 384 " "
*c. 400 " "
d. 576 " "

30. Assume that the Consumer Price Index in a given year is 150. Then the prices in the given year are _____ the prices in the base year.
*a. one and one half times
b. 50% less than
c. 66 2/3% greater than
d. two thirds as much as

31. Assume that the Consumer Price Index in a given year is 150. Then the value of money in the given year is _____ the value of money in the base year.
a. one and one half times
b. 50% less than
c. 66 2/3% greater than
*d. two thirds as much as

32. Which of the following does not mean the same as the remaining three?
a. adjusted GNP
b. constant GNP
*c. money GNP
d. real GNP

33. Economic growth is usually defined as
*a. an increase in per capita real GNP.
b. an increase in real GNP.
c. an increase in the price level.
d. an increase in the factors of production.

34. When the increase in output is greater than the increase in input we usually conclude that the greater output came from
a. decreased quality.
b. increased man-hours of work.
c. increased population.
*d. increased productivity.

35. Given:

Year	(approximate) Population	Real GNP (1929 = 100)
1905	80 million	$44 billion

What is the real GNP per capita for 1905?
a. $352 b. $440 *c. $550 d. $1820

36. Which of the following pairs of items would have to be subtracted from Gross National Product in order to get national income?
a. Savings and net investment.
b. Net investment and depreciation.
*c. Depreciation and indirect business taxes.
d. Indirect business taxes and transfer payments.

37. Suppose that there is a five-billion dollar decrease in investment. Which of the following would most likely result?
    a. This would bring about an increase in consumption.
    b. There would be an equal drop in the national income.
    c. Taxes would be increased to offset the drop.
    *d. Aggregate demand would fall by some multiple of the decrease.

38. When current income is used to buy consumer goods and services it is called,
    a. saving.
    b. investing.
    c. buying.
    *d. spending.

39. Personal Income includes all but
    *a. Social Security taxes.
    b. rental income.
    c. transfer payments.
    d. wages and salary.

40. Assume that the marginal propensity (inclination, desire) to consume is 60%. Then the so-called <u>multiplier</u> would be
    a. 2/5 b. 3/5 c. 5/3 *d. 5/2

Course in Economics: Multiple-choice Test, Units 12-14

Directions: Fill out the information called for on the separate answer sheet. When your teacher tells you to begin, go ahead with this part of the test. Choose the best answer in each item and record your answer on the separate answer sheet after the appropriate item number.

Begin with item 41 on the answer sheet (where we stopped on the previous test).

41. The main purpose of controlling the money supply is to
*a. attempt to balance the flow of money with the flow of goods and services.
b. prevent consumers from borrowing beyond their ability to take on debt.
c. reduce the flow of goods and services.
d. prevent a run-away inflation of prices.

42. If the average dollar is spent 50 times in a year, what size money stream will a thousand dollars in circulation bring about during the year?
a. $1,000 b. $5,000 *c. $50,000 d. $500,000

43. At present, about what percent of the supply of money in the U. S. is in the form of 'check money'?
a. 3% b. 20% c. 34% *d. 75%

44. When a bank creates deposits, it is
*a. extending credit to borrowers.
b. withdrawing money from the Federal Reserve.
c. releasing currency.
d. converting gold certificates into cash.

45. A certain amount of money, known as "required reserves" must be kept on deposit in a Federal Reserve Bank. At present the main purpose of the required reserves is to
a. be prepared in case of a "run" on the bank.
*b. control the amount of money that the banks lend.
c. provide a safe place for large amounts of money.
d. buy securities such as U. S. Government bonds.

46. Commercial banks have a "reserve" account at one of the Federal Reserve Banks. Such a "reserve" account is essentially a
a. share of ownership of a Federal Reserve Bank.
b. savings account.
*c. checking account.
d. deposit of gold held in reserve.

47. Demand deposits are also known as
    a. cash-surrender value.
    b. U. S. Government bonds.
    *c. checking accounts.
    d. savings accounts.

48. Mr. Watts deposited $800 to his account in the First National Bank. Assume that the reserve requirement is 20%. What is the maximum amount that this bank can normally loan, without discounting, as a result of Mr. Watts' deposit?
    a. $160 *b. $640 c. $800 d. $4,000

49. Assume that an original deposit of $10,000 is made in a commercial bank, and that the reserve ratio is 20%. Under these conditions, the maximum possible amount that the money supply may be expanded through the banking system is
    a. $2,000 b. $8,000 c. $10,000 *d. $40,000

50. The money supply is expanded when commercial banks
    a. are repaid the loans previously made to borrowers.
    *b. obtain loans from the Federal Reserve Bank.
    c. raise their interest rates on loans.
    d. buy government securities such as bonds.

51. What will happen to bank reserves in this country if the U. S. Government buys $5 million of gold?
    a. Bank reserves will stay the same.
    **b. Bank reserves will be increased.
    c. Bank reserves will be reduced.
    *d. Not enough information here for one to decide.

52. Who owns and who controls the Federal Reserve System?
    a. It is owned by the U. S. Government and controlled by a Board of Governors appointed by the President of the U. S.
    b. It is owned by the U. S. Government but controlled by a Board of Governors appointed by the member banks.
    c. It is privately owned and controlled by a Board of Governors appointed by the member banks.
    *d. It is privately owned but controlled by a Board of Governors appointed by the President of the United States.

53. The Citizens' Bank bought one million dollars of government securities from the Federal Reserve Bank. As a result:
    *a. their excess reserves were decreased.
    b. the reserve ratio was changed.
    c. they could make more loans.
    d. the interest rate on loans by the Citizens' Bank was changed.

54. An American exporter shipped cotton valued at $40,000 to England. England shipped woolen cloth valued at $50,000 to the United States. The balance of this exchange will ordinarily be taken care of by:
    a. shipping gold valued at $10,000 to England.
    *b. sending claims on United States dollars in the amount of $10,000.
    c. sending government securities worth $10,000 to England.
    d. increasing shipments of cotton to England to compensate for the deficit.

Directions for items 55 to 62: These items consist of certain actions the Federal Reserve System could, or could not, take to control the supply of money. Classify these actions according to the code below. Blacken answer space

a. if this is an action the Federal Reserve could take to encourage "easy money";

b. if this is an action the Federal Reserve could take to encourage "tight money";

c. if this is an action the Federal Reserve could not take to control the supply of money.

55. Raise the discount rate to banks. (b)

56. Lower the discount rate to banks. (a)

57. Lend money from the reserve accounts of commercial banks. (c)

58. Buy securities such as government bonds on the open market. (a)

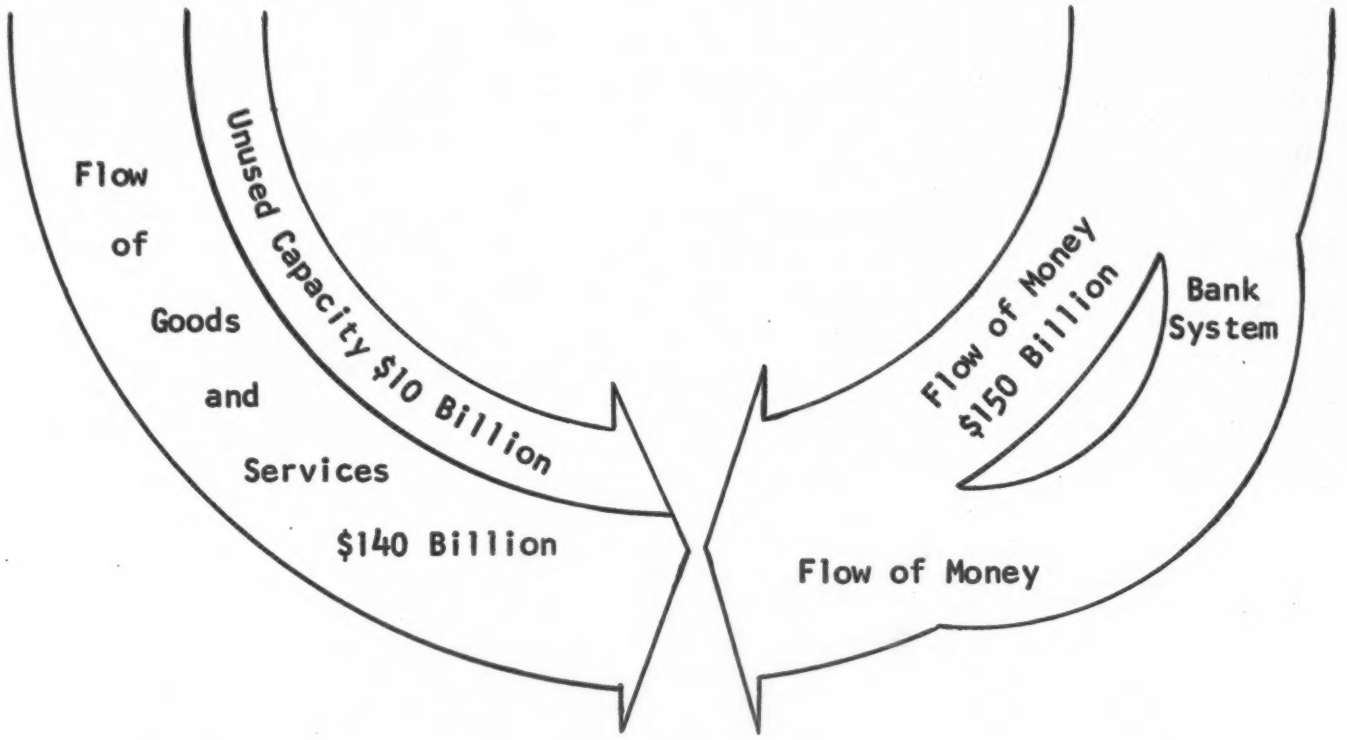
59. Sell securities such as government bonds on the open market. (b)

60. Raise the reserve ratio. (b)

61. Lower the reserve ratio. (a)

62. Restrict imports from foreign countries. (c)

Directions for items 63 to 65: These items refer to the chart below. Assume that resources are not being used to their fullest extent.



63. What condition of the economy does this diagram represent?
    *a. Inadequate supply of goods and services
    b. Inadequate demand for goods and services
    c. Inadequate flow of money
    d. Equilibrium between the two flows

64. Which of the following is the most likely to happen if this condition continues?
    a. An economic depression
    b. Inflation of price level
    c. Equilibrium of the two flows
    *d. Increased production

65. What policy would we expect the Federal Reserve Board to follow under the above conditions?
    **a. Easy money
    b. Tight money
    *c. Neutral

A TEST OF

INTERPRETATION OF READING MATERIALS

IN ECONOMICS

FORM A

January, 1966

General Directions

This test consists of two exercises each of which is based upon reading passages dealing with economics. Each of the two sets of reading materials is followed by a number of best-answer items relating to the materials. Read the passage first and then answer the questions following it. You may refer to the passage as often as necessary.

Record your answer to each question on the special answer sheet. Do this by putting an X through the letter corresponding to your choice for the given item. (The letters are in scrambled order on the answer sheet.)

Write your reasons for questions 19 and 20 on the answer sheet.

Developed by the Social Studies Curriculum Center

The Ohio State University

Exercise 1

"Capitalism has been defined as a reliance on the market system, a chain of markets in which signals are given and received when purchases are made." Now a closer examination must be made of the market system as it operates in U. S. Capitalism today.

The passing of signals through a chain of markets is a remarkable social arrangement. To describe the chain simply, we have linked resources to manufacturer to wholesaler to retailer to consumer. Actually thousands of markets are tied together in producing an automobile, each stage of production which involves a sale representing one link in the chain. Imagine the number of articles in a large department store and then go on to try to imagine the millions of market relations in the production of a Gross National Product of over $550 billions, employing from 67-69 million people (not including the Armed Forces).

We can think of the chain as beginning with the consumer asking for goods and services. Immediately we must find out where he acquired his wants. The answer - from custom, from hearsay, and from advertising. In one sense, all wants begin and end with the consumer, for he must either originate the demand or by his purchases approve finally the guesses of the manufacturer and the retailer. Typically, it is the manufacturer who takes the risk of guessing, but he gets his clues from new developments in technology (for example, new materials or new processes) and from previous experiences with and suggestions from retailers.

Many questions can be raised about the position of the consumer. How free is he really to determine what will be made? Very little, perhaps, but he has great powers of approval or disapproval. Can he really know what is good for him? Not always, but in the U. S. he is given great latitude while being protected from deceptions and harmful products. Is the choice real when all automobiles of the same price range are alike? In a sense they are, but style and other features can make a tremendous difference in sales. Doesn't advertising control our wants? No doubt advertising in obvious and subtle ways has an enormous influence but there is competition among the advertisers. Aren't we putting too much of our resources into gadgets and not enough into schools and parks? Some have argued this - whether they are right or wrong, a free society should stand back at times and examine its behavior. All of these are good questions and deserve to be debated. But the truth is that in the U. S. an enormous amount and variety of goods and services are created for consumers who exercise a great freedom of choice.

How perfectly does the chain of markets work in passing along the signals? Considering the complex relationships, the answer is that it works astonishingly well. But at times there are sluggish responses

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that cause wrong guesses to be made, and inventories that cannot be sold can accumulate. Sometimes the signals are exaggerated, so that a pickup in sales might cause overproduction resulting in excessive inventories. Yet all of these reactions shows that human beings are guessing and free to guess. The price of freedom is often maladjustment, but we are learning how to preserve the freedom and minimize the disturbances.

1. The author implies that the whole question of consumer demand
   a. has been solved by advertising.
   b. must be eliminated if our economy is to remain free.
   c. is a problem found only in market economies.
   *d. is a complicated interaction between several forces working on the consumer.

2. When a consumer makes a purchase, he
   a. sends a signal to the advertiser to increase their sales campaign.
   *b. casts a dollar-vote in favor of the continued production of the purchased product.
   c. sets up a network of responses among other consumers.
   d. signals that resources should be allocated in a different direction.

3. The term overproduction refers to
   a. production in excess of the quota set by the manufacturer.
   b. a maladjustment in production caused by overadvertising.
   c. sluggish responses to consumer demand.
   *d. the production of goods in excess of consumer demand.

4. The author of the passage
   a. believes that the U. S. economy works very well but that freedom cannot be maintained unless all the maladjustments are corrected.
   b. feels that capitalism is a good economic system but that in the United States the manufacturer should not be limited by consumer decisions.
   *c. believes that the complexity of the U. S. market system at times produces maladjustments but that this is the price we pay for consumer freedom.
   d. implies that more centralized direction of the U. S. economy is necessary to prevent consumers from making unwise choices.

5. The author uses the analogy of links in a chain to describe the U. S. market system. Which of the following analogies would also serve the purpose?
   a. a log jam in a river.
   *b. a stairway.
   c. a policeman directing traffic.
   d. a solid block of granite.

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6. Which of the following is <u>not</u> consistent with a market system economy?
   a. unemployment compensation.
   b. high protective tariffs.
   *c. central planning for the allocation of resources.
   d. the purchase of goods and services on credit.

7. Which of the following would be consistent with the passage?
   *a. In order to maintain a free market system an economy must maintain the freedom of enterprise and the freedom of the consumer.
   b. Sluggish responses resulting in overproduction should be prevented by government regulations and central planning.
   c. An economy may be capitalistic without having a market system but all economies that have market systems are non-capitalistic.
   d. Since consumers do not always make wise choices, the advertising industry is dedicated to eliminating this handicap to our economic system.

8. The term "market system" as used in the passage is best defined as
   a. the transportation network that connects one market with another.
   *b. every point in production and distribution which involves a sale.
   c. the place where the consumer decides which products he will purchase.
   d. the methods used by manufacturers to promote the sale of their products.

9. Which of the following best describes the role of the consumer in the American economy?
   a. The consumer decides what is to be produced, how it is to be produced, and what quantity of each item will be produced.
   b. The consumer making use of custom, hearsay, and advertising attempts to estimate the quality and quantity of goods that will be produced.
   *c. The consumer approves or rejects through his purchases those items that have been produced thus setting in motion a series of signals passing from retailers, to wholesalers, to manufacturers.
   d. The consumer is like a policeman, decides which products are harmful and prevents their production by not purchasing them and signals the most useful products ahead by his decisions to buy.

10. According to the passage, advertising is
   a. the backbone of the market system.
   b. one of the signals passed on by consumers to retailers.
   c. the cause of most of the maladjustments in the U. S. economy.
   *d. one of the influences on consumer demand.

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REPORT A

FULL EMPLOYMENT

In the year just ended (1964), we have made notable progress toward the Employment Act's central goal of ". . . useful employment opportunities, including self-employment, for those able, willing, and seeking to work, and . . . maximum employment, production, and purchasing power."

Employment:
- Additional jobs for 1 1/2 million persons have been created in the past year, bringing the total of new jobs since January 1961 to 4 1/2 million.
- Unemployment dropped from 5.7 percent in 1963 to 5.2 percent in 1964 and was down to 5.0 percent at year's end.

Production:
- Gross National Product (GNP) advanced strongly from $584 billion in 1963 to $622 billion in 1964.
- Industrial production rose 8 percent in the past twelve months.

Purchasing power:
- The average weekly wage in manufacturing stands at a record $106.55, a gain of $3.89 from a year ago and of $17.50 from early 1961.
- Average personal income after taxes has reached $2,288 a year--up 17 1/2 percent in four years.
- Corporate profits after taxes have now risen continuously for four straight years--from a rate of $19 1/2 billion early in 1961 to nearly $32 billion at the end of 1964.

But high levels of employment, production, and purchasing power cannot rest on a sound base if we are plagued by slow growth, inflation, or a lack of confidence in the dollar. Since 1946, therefore, we have come to recognize that the mandate of the Employment Act implies a series of objectives closely related to the goal of full employment:

--rapid growth,
--price stability, and
--equilibrium in our balance of payments.

RAPID GROWTH

True prosperity means more than the full use of the productive powers available at any given time. It also means the rapid expansion

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of those powers. In the long run, it is only a growth of over-all productive capacity that can swell individual incomes and raise living standards. Thus, rapid economic growth is clearly an added goal of economic policy.

- Our gain of $132 billion in GNP since the first quarter of 1961 represents an average growth rate (in constant prices) of 5 percent a year.
- This contrasts with the average growth rate of 2 1/2 percent a year between 1953 and 1960.

Part of our faster gain in the last four years has narrowed the "gap" that had opened up between our actual output and our potential in the preceding years of slow expansion. But the growth of our potential is also speeding up. Estimated at 3 1/2 percent a year during most of the 1950's, it is estimated at 4 percent in the years ahead; and sound policies can and should raise it above that, even while moving our actual performance closer to our potential.

PRICE STABILITY

I regard the goal of over-all price stability as fully implied in the language of the Employment Act of 1946.

We can be proud of our recent record on prices:

- Wholesale prices are essentially unchanged from four years ago, and from a year ago.
- Consumer prices have inched upward at an average rate of 1.2 percent a year since early 1961, and 1.2 percent in the past 12 months. (Much of this increase probably reflects our inability fully to measure improvements in the quality of consumer goods and services.)

BALANCE OF PAYMENTS EQUILIBRIUM

The Employment Act requires that employment policy be "consistent" with "other essential considerations of national policy." Persistent balance of payments deficits in the 1950's reached an annual average of nearly $4 billion in 1958-60. Deficits of this size threatened to undermine confidence in the dollar abroad and limited our ability to pursue, simultaneously, our domestic and overseas objectives. As a result, restoring and maintaining equilibrium in the U. S. balance of payments has for some years been recognized as a vital goal of economic policy.

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During the past four years

- Our over-all balance of payments position has improved, and the outflow of our gold has been greatly reduced.
- Our commercial exports have risen more than 25 percent since 1960, bringing our trade surplus to a new postwar record.
- The annual dollar outflow arising from our aid and defense commitments has been cut $1 billion, without impairing programs.
- Our means of financing the deficit have been strengthened, reducing the gold outflow and helping to build confidence in the dollar.

CONSISTENCY OF OUR GOALS

Thus, the record of our past four years has been one of <u>simultaneous advance toward full employment, rapid growth, price stability, and international balance</u>.

We have proved that with proper policies these goals are not mutually inconsistent. They can be mutually reinforcing.

REPORT B

A year ago, most of the experts were bearish; 1965, they said, would be "good, but not good enough." Economists fretted over the 5.0 percent unemployment rate, the balance of payments and a long string of possible strikes; they worried that the long business expansion, then in its 46th month, might peter out in the second half of the year. What happened? The Gross National Product vaulted to $673 billion (from $629 billion in 1964), a "real" growth of 5.3 percent after discounting rising prices. Unemployment at year's end had been whittled to 4.2 percent of the labor force. Companies tucked up $44.6 billion in profits after paying their taxes, and there was a staggering $2,706 in personal income for every man, woman and child in the country. It was a dizzy year, a superb year, the best year ever.

<u>Rising Forecasts</u>: As clearly as the crystal ball ever shows it, there is more of the same in store for 1966. On a swelling tide of consumer confidence, government spending and business investment, the Gross National Product will churn past an annual rate of $700 billion some time around midyear. Assessing the prospects as recently as last Thanksgiving, economists in and out of Washington put together their annual "standard forecast" calling for a GNP of about $714 billion, a real growth rate of 4 1/2 percent. But as the prospective defense budget has risen sharply, the standard forecast has risen with it. By last week, most of the delegates to the American Economic Association's convention in New York were predicting a GNP of $720 billion to $725 billion - and some were guessing $735 billion.

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The outlook is undoubtedly good; it may be too good. With wages and prices creeping up and demand pressing hard against supply, the economy may be dangerously close to overheating. Last week alone, the Labor Department reported that the consumer price index jumped to a new record of 110.6 in November, and Bethlehem Steel unexpectedly raised some structural-steel prices $5 a ton - a move the Administration promptly branded "inflationary."

But at the moment, the biggest question mark is simply a variation on the ancient choice between guns and butter. In the 1966 picture, says Chase Manhattan Bank economist William F. Butler, "Vietnam is the major, and almost the only, uncertainty." If the war accelerates much further, the cost of waging it would put enormous inflationary pressure on the economy. To stem this, President Johnson and his advisers, working last week on the budget for the fiscal year starting next July, were whacking large slices from funds previously authorized for Great Society programs. The Federal Reserve Board, which has already raised the discount rate that sets interest rates throughout the economy, stands ready to cut down the money supply. Consumers and businessmen will start getting a $1.6 billion break this week with the second stage of last year's excise-tax cuts, but they will also start paying $5 billion more in Social Security taxes; and if the inflationary pressure can't be contained, they may well be hit with a new tax increase or even, as a last resort, outright wage and price controls.

Sudden Slack: Paradoxically, the managers of the economy must be equally prepared to spring in the other direction. If recent gropings toward peace should bear fruit, the world would rejoice. But as chief economic adviser Gardner Ackley said last week, "The economy would lose a lot of steam." In fact, an economy geared to a partial war could quickly slow down as military production fell off, discharged GI's began looking for jobs and high tax receipts were bottled up in the Treasury instead of flowing through the spending stream. Nobody believes prosperity depends on war. But countering the sudden slack, most economists agree, would call for a switch in spending back to the domestic side, looser money and credit policies and a quick tax cut to spur demand.

Margin for Error: In debating policies for 1966, the Washington practitioners of "new economics" (the theory that prosperity can be sustained by government management of spending and taxes) are uneasily aware that their margin for error has shrunk considerably. On the one hand, cooling the economy is a tricky business at best; as Ackley himself concedes, "There's always a danger that you'll go too far. We're aware of that." But on the other hand, a new expansionary push - even after a slowdown in military spending - carries more risk of inflation than ever.

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For four long years, with the economy lagging well behind its potential performance, the Administration could attack almost all of its economic problems by promoting more growth. With a pool of unemployed men and unused plant capacity to soak up any excesses, an overvigorous push was unlikely to cause inflationary overheating. But now that unemployment has fallen to a 4.1 percent rate, Ackley acknowledges that "it's getting down to where we used to consider we had full employment." And in a speech to the economists' convention in the cavernous ballroom of the New York Hilton last week, Ackley spelled out the lesson: "The difference between 5 1/2 percent and 6 percent unemployment has little importance for price levels; the difference between 3 1/2 percent and 4 percent may be quite significant." What's more, many economists doubt that the nation's manufacturers, currently operating at close-to-capacity rates, could handle any sudden increase in damand without shortages and an upward pressure on prices. In effect, balancing on the growth line between stagnation and inflation is getting more difficult - and, for the first time, highwire artists of the new economics are performing without a net.

Businessmen can do little about any of these issues beyond hoping that the decisions made in Washington will turn out to be right; and, as they move into 1966, businessmen across the country are well aware of the uncertainties. But for all that, in industry after industry, top corporate officials are convinced that 1966 will be another banner year.

11. Which of the following statements best describes the two reports?
    a. Report "A" appeals to the reader's emotions while report "B" appeals to the reader's knowledge of economics.
    b. Report "B" appeals to the reader's emotions while report "A" appeals to the reader's knowledge of economics.
    *c. Both are analytical presentations of a particular point of view.
    d. Both are emotional presentations of a particular point of view.

12. Which of the following titles would be most appropriate for report "B"?
    *a. Full Employment and the Threat of Inflation
    b. The Menace of Economic Stability
    c. Forward with the Great Society
    d. The Effect of the Tax Cut on Monetary Policy

13. Both reports indicate that U. S. economic growth in 1964 and 1965 has resulted in part from
    *a. business expansion.
    b. increased American investments abroad.
    c. higher wages.
    d. tight-money policies.

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14. The reports indicate that U. S. prosperity in 1964 and 1965 depended mainly on
    a. the increased production for defense supplies and war in Vietnam.
    *b. coordinating the policies for growth, employment, stability and balance of payments.
    c. government expenditures for Great Society programs.
    d. coordinating the tight-money policy of the Federal Reserve Board with the large amount of government spending.

15. According to report "A," in 1964 the goal of full employment was accompanied by:
    a. a "tight" money policy and a reduction in consumer spending.
    b. the greatest amount of tax reducting with the least amount of increase in consumer demand.
    c. the rapid increase of consumer prices along with a rapid advance in wages.
    *d. a maximum amount of economic growth with a minimum amount of instability in prices and wages.

16. The problems of prosperity (growth and stability) in 1966, as described in report "B," are concerned mainly with inflationary pressures arising from
    a. overproduction.
    b. too little government spending.
    c. a tight-money policy.
    *d. inability to expand production enough.

17. Report "B" refers to the need for flexible monetary and fiscal policies. The report suggests that if the war in Vietnam speeds up, (1) government spending for Great Society programs would be reduced and (2) the Federal Reserve Board would place further restraints on the money supply. What kind(s) of policy do these two actions represent?
    a. Actions (1) and (2) are both examples of fiscal policy.
    b. Actions (1) and (2) are both examples of monetary policy.
    *c. Action (1) represents fiscal policy; action (2) represents monetary policy.
    d. Action (1) represents monetary policy; action (2) represents fiscal policy.

18. Successful peace negotiations in Vietnam would change the present economic policies of the government. Which of the following would most likely result?
    a. Increased military aid to nations in the North Atlantic Treaty Organization (NATO)
    b. Decreased funds for the Alliance for Progress
    *c. Increased expenditures for the Great Society Program
    d. Decreased funds for the Aerospace Program

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19. U. S. economic growth in the last four years has taken place under conditions of inadequate-supply disequilibrium with unused human and capital resources. All of the following four indexes have changed. According to report "B," a change in which of these suggests that we should adjust our policies for growth and stability accordingly?

*a. The unemployment rate
b. Per capita real GNP
c. The level of corporate profits
d. The level of personal income

Briefly explain the reasoning you used to arrive at your answer in item 19. Write your explanation on the front of the answer sheet.

20. U. S. budgetary policies are usually made for one year in advance. In order to be carried out in the best interest of the nation, they must be

a. definitely carried out for the sake of confidence in the U. S. economy.
*b. flexible enough to be changed when unforeseen (changes in) conditions arise.
c. always directed toward increased production.
d. concerned primarily with the financial policies of other nations.

Briefly explain the reasoning you used to arrive at your answer in item 20. Write this explanation on the back of the answer sheet.

Table C.1

Item-Analysis Data for Test over Units 1 through 6[a]

Item	Data for Group 1		Lowest, median, and highest success in the ten groups		
	Succ.	Disc.	Low.	Med.	High.
1	.53	.46	.24	.55	.81
2	.86	.29	.71	.88	.97
3	.60	.54	.07	.62	.90
4	.63	.60	.59	.79	.92
5	.37	.58	.37	.86	1.00
6	.63	.22	.38	.62	.94
7	.33	.28	.06	.34	.76
8	.28	.41	.12	.46	.77
9	.37	.36	.37	.60	.88
10	.70	.45	.41	.68	.94
11	.37	.04	.12	.24	.37
12	.44	.51	.18	.43	.64
13	.35	.39	.28	.40	.67
14	.28	.47	.10	.24	.36
15	.47	.50	.47	.57	.86
16	.70	.37	.41	.56	.76
17	.53	.53	.28	.59	.78
18	.65	.57	.24	.50	.76
19	.26	-.02	.10	.30	.57
20	.05	.11	.05	.56	.76
21	.26	.34	.24	.40	.85
22	.30	.57	.30	.64	.90

[a]"Succ." is percent succeeding on item. "Disc." is index of discrimination: point-biserial coefficient of correlation.

Table C.2

Item-Analysis Data for Test
over Units 7 through 11

Item	Data for Group 1		Lowest, median, and highest success in the ten groups		
	Succ.	Disc.	Low.	Med.	High.
23	.35	.45	.19	.36	.53
24	.58	.59	.30	.70	.76
25	.47	.39	.37	.56	.77
26	.21	-.18	.19	.34	.55
27	.79	.51	.61	.86	.90
28	.44	.35	.44	.57	.71
29	.63	.41	.39	.60	.88
30	.37	.52	.00	.39	.69
31	.33	.13	.06	.18	.35
32	.44	.10	.19	.48	1.00
33	.60	.57	.33	.70	.88
34	.60	.52	.55	.66	.81
35	.56	.40	.35	.64	.81
36	.30	.37	.10	.21	.31
37	.12	-.03	.12	.19	.30
38	.74	.45	.41	.66	.90
39	.60	.41	.22	.60	.71
40	.12	.07	.00	.10	.27

Table C.3

Item-Analysis Data for Test
over Units 12 through 14

Item	Data for Group 1		Lowest, median, and highest success in the ten groups		
	Succ.	Disc.	Low.	Med.	High.
41	.86	.11	.38	.74	.95
42	.86	.40	.62	.77	.96
43	.74	.40	.66	.76	.88
44	.60	.19	.35	.50	.70
45	.74	.28	.29	.61	.76
46	.37	.47	.00	.25	.47
47	.26	.25	.26	.62	.97
48	.53	.17	.29	.51	.92
49	.07	.14	.06	.09	.44
50	.42	.50	.10	.25	.47
51	.44	.18	.00	.44	.55
52	.40	.37	.00	.16	.53
53	.16	.34	.06	.24	.70
54	.51	.40	.05	.31	.56
55	.74	.64	.50	.67	.92
56	.77	.45	.47	.69	.96
57	.60	.24	.38	.57	.60
58	.60	.40	.21	.42	.84
59	.53	.33	.26	.41	.80
60	.65	.36	.53	.74	1.00
61	.67	.40	.41	.74	1.00
62	.67	.29	.53	.70	.96
63	.56	.43	.32	.54	.85
64	.44	.19	.17	.32	.47
65	.16	.09	.12	.23	.55

Table C.4

Item-Analysis Data for Test of Interpretation of Reading Materials

Item	Data for Group 1		Lowest, median, and highest success in the ten groups		
	Succ.	Disc.	Low.	Med.	High.
1	.69	.33	.44	.67	.84
2	.69	.24	.47	.70	1.00
3	.69	.33	.45	.66	1.00
4	.57	.48	.38	.58	.92
5	.60	.33	.36	.54	.75
6	.45	.52	.23	.60	.92
7	.62	.38	.38	.64	.88
8	.36	.33	.25	.48	.59
9	.71	.48	.27	.68	.87
10	.76	.48	.54	.79	.96
11	.60	.14	.16	.36	.60
12	.62	.10	.38	.56	.65
13	.38	.57	.25	.43	.67
14	.43	.29	.30	.46	.59
15	.55	.52	.24	.42	.58
16	.36	-.05	.12	.36	.58
17	.48	.10	.15	.42	.59
18	.62	.29	.35	.66	.87
19	.38	.10	.38	.54	.71
20	.60	.52	.58	.66	.95

APPENDIX D

WRITTEN EXERCISES AND QUESTIONS USED IN THE PROJECT, INCLUDING MODEL ANSWERS, SELECTED GUIDES FOR EVALUATION OF ANSWERS, OVER-ALL SUMMARIES OF RESULTS, AND INTERPRETATION OF RESULTS

Written Exercises and Questions for Units 1-6, Including Model Answers

1. Unit 1 dealt with the Definition of Scarcity; Unit 2 dealt with the Factors of Production. In what general ways, if any, were these two units related--that is, how were the main ideas in one related to the main ideas in the other?

   Model Answer: Scarcity in Unit 1 dealt with the basic problem of wants being greater than supply. Unit 2 discussed the factors of production from which the goods and services are made. This further developed the concept of scarcity since the factors of production are what is scarce.

2. Unit 3 dealt with the topic, What to Produce. In what general ways was Unit 3 related to the first two units?

   Model Answer: After having studied the basic problem of scarcity and the five factors of production which are themselves scarce, one can begin to ask the basic economic question - "What to Produce?" To answer this, one must know what factors are available to be used.

3. The topics of Units 3-6 were as follows:
   Unit 3: What to Produce
   Unit 4: Allocating the Factors of Production
   Unit 5: Stimulating Efficiency
   Unit 6: Dividing the Goods and Services

   In what general ways were Units 3-6 related? That is, what was their common basis?

   Model Answer: These four units discuss the basic economic decisions which must be made by every society. Thus, every society must decide what to produce, how to allocate the factors of production, how to stimulate efficiency in producing the goods or services, and how to divide the resulting products. Each of these decisions grows out of the basic fact of scarcity.

Table D.1

Kinds and Frequencies of Answers
Given to Questions 1-3, Units 1-6,
by Half of Group 1, N=21,
an Average Group

Question 1

1. Stated weak relationship - no unfolding. . . . . (6)
2. Discussed production . . . . . (4)
3. Circular - explained content of unit . . . . . (4)
4. Had some understanding, but was vague. . . . . (2)
5. Related through the profit motive. . . . . (1)
6. Inverted relationship - "scarcity lessened by factors of production" . . . . . (1)
7. Mentioned factors of production only . . . . . (1)
8. Saw unfolding relationship . . . . . (1)
9. Used definitions only - scarcity and production. . . (1)

Question 2

1. Stated weak relationship - no unfolding. . . . . (6)
2. Discussed practical aspects of production. . . . . (4)
3. Emphasized product scarcity. . . . . (3)
4. Said that supply of factors of production and demand for product influences what is produced . . . (3)
5. Recognized unfolding aspects of relationship . . . . (2)
6. Unit 3 told "what to produce in case of scarcity". . (1)
7. Felt that expectations guide decisions . . . . . (1)
8. Used examples from the unit. . . . . (1)

Question 3 (The students had apparently only covered through Unit 5. They were not familiar with the materials in Unit 6.)

1. Reworded chapter titles which are given in the question . . . . . (7)
2. Saw a relation to production . . . . . (5)
3. Emphasized factors of production . . . . . (4)
4. Discussed scarcity . . . . . (2)
5. Stated only "scarcity and production". . . . . (1)
6. Said "they are questions that have to be answers" (sic) . . . . . (1)
7. Blank paper. . . . . (1)

Table D.2

Kinds and Frequencies of Answers
Given to Questions 1-3, Units 1-6,
by about Half of Group 10, N=26,
a Superior Group

Question 1

1. Mentioned production and/or allocation . . . . . (11)
2. Had some understanding, but was vague. . . . . (4)
3. Saw unfolding relationship . . . . . (3)
4. Circular - explained content of unit . . . . . (2)
5. Used definitions only. . . . . (2)
6. Saw no relationship. . . . . (1)
7. Related to national or local scarcity. . . . . (1)
8. Inverted order--"Factors of production must be discussed first" . . . . . (1)
9. Said that scarcity changes amounts of factors of production . . . . . (1)

Question 2

1. Stated weak relationship - little or no unfolding. . . . . (8)
2. Discussed practical aspects of production. . . . . (6)
3. Used a superficial connection. . . . . (4)
4. Reworded question. . . . . (2)
5. Discussed demand and/or profit . . . . . (2)
6. Emphasized product scarcity. . . . . (1)
7. Applied a hypothetical situation . . . . . (1)
8. Stated that "factors of production must be present in production" . . . . . (1)
9. Said that "scarcity of the product would depend on what you are going to produce" . . . . . (1)

Question 3

1. Used the idea of a sequence (sometimes simply a "story") in the several units. . . . . (6)
2. Saw a relation to production . . . . . (6)
3. Reworded chapter titles which are given in the question. . . . (4)
4. Gave simple, narrow, specific statements that showed no clear understanding . . . . . (4)
5. Discussed practical aspects of production. . . . . (3)
6. Approximated the model answer - the idea that these successive units dealt with basic economic decisions growing out of the fact of scarcity. . . . . (2)
7. Made a broad, platitudinous statement. . . . . (1)

Over-all Summary of Results for Questions 1-3, Units 1-6

Question 1

Several answers kept recurring. Many students attempted to include the problems connected with production. The students often included a statement to the effect that "the more production, the less scarce needs and wants are." Sometimes the students brought in the idea of production in the practical sense. That is, they felt it necessary to relate to reality. Other students were actually going beyond the scope of the question and discussing Unit 3 - "What to Produce?" and Unit 4 - "Allocating the Factors of Production".

Another prevalent response was given by many students who merely explained the content of each unit without recognizing any unfolding process. Even when some relationship was developed, the students were quite vague. Answers often said only that "the factors of production are what is scarce." Since this was explicit in Unit 2, the students still did not understand the unfolding or were unable to express it adequately. Other students only gave definitions of scarcity and the factors of production.

These above answers were the most common for this question, although there were many other variations. A few students, for example, saw the unfolding as desired and expressed their ideas quite well. On the other hand, several students saw absolutely no relationship between the units (although one student who maintained this position went on to give one of the best explanations of the unfolding). Another example of an answer given was for the student to reverse the order of the material, i.e. the factors of production must be studied before one can examine the question of scarcity. The majority of answers, however, were but variations on the two prevalent themes of production or content.

Question 2

The students seemed to be able to answer this question somewhat better than the first one. Even though the relationships which they were able to comprehend were often weak, there was present the germination of an idea. For example: "You can't produce if there aren't materials to produce with. These materials are the 5 factors of production. The scarcity in Unit 1 limits what can be produced." This example is typical of many of the answers, for although it shows a type of relationship, the student still has not seen the unfolding of the ideas.

Another prevalent answer was for the students to discuss the practical aspects of production. They often would mention that a producer or a businessman would have to consider such questions as scarcity and the factors of production. Thus they attempted to show a relationship, but they approached it from a purely pragmatic standpoint.

Yet another rather common answer was an attempt on the part of the students to discuss not only the scarcity of the factors of production, but also the demand for the proposed product. Once again the students attempted to use a situation approaching reality. Although it is true that both demand and supply must be considered, the question of demand was not relevant to the unfolding relationship.

One problem seemed to be repeated in many of the answers. The students were uncertain of the referrent to "scarcity". In the same answer they would use scarcity to indicate both the product and the factors of production.

There were also isolated variations of answers. For example, one student attempted (unsuccessfully) to answer this through the use of a hypothetical situation.

Question 3

Answers to question three were uniformly poor. Many of the students felt that these units were but steps in the production of goods and services. Implied in many of these answers was the profit motive. The students felt that if all of these questions were answered by the entrepreneur that he would not only succeed in producing a product, but also have a resulting profit.

Many other students simply reworded the question. They made brief summaries of the chapters, but since the question stated the titles of the units, this did not indicate any knowledge beyond familiarity with the units.

There were isolated instances of students who recognized that these units discussed the basic economic decisions of a society. However, even some students who recognized these as economic decisions thought of them as being decisions of an individual producer and not of society as a whole. A comprehension of the relationship of Units 3-6 was evidenced by very few.

Interpretation of Results, Questions 1-3, Units 1-6

Several outside conditions probably contributed to the poor results on these questions. The students had probably not previously taken a test of this kind where they were required to show a relationship of ideas. Therefore, even if they understood the unfolding, the students may have been unable to express themselves adequately. The teachers were also somewhat unfamiliar with both the content of the materials and the unfolding structure of the discipline-centered approach. In point of fact, several of the teachers later mentioned that they had not realized what was meant by the unfolding until Unit 7. This means that the students were not prepared for such a test either from previous experience or from classroom presentation of the materials.

A general interpretation of the results of this first test can justifiably be done only in the light of the above qualifications. The results are, therefore, not a true reflection upon the content of the units. Perhaps one can say for this reason that the tests were unable to give a true measure of the students' knowledge becuase of these other (unmeasurable) variables.

With particular reference to question 3, it appeared that the fact that Units 3-6 were discussing the basic economic decisions of a society was not sufficiently explicit in the materials. It was stated in the sequenced outline, but it was not stressed in the learning situations in either the Teacher's Guide or the Student Materials. The students often attempted to make a relationship between ideas in the first two questions. In this one, however, the only attempted relationship was through the physical reality of production. Evidently the students were not sufficiently familiar with the ideas, and the basis for drawing such theoretical conclusions was not presented adequately. This idea must be stressed more strongly in both the Teacher's Guide and the Student Materials.

Written Exercises and Questions for Units 7-11,
Including Model Answers

Exercise 1

Directions: Read the data on "Kowa" on the opposite page.

a) Fill in the table on the opposite page, using the data given.

b) What is the Gross National Product for Kowa in 1965? ($1,300)

c) What is the Disposable Personal Income in 1965? ($905)

Now, answer only the one question checked below. Write a short paragraph below to show your understanding.

d) Businesses saved $125 ($75 for depreciation and $50 from retained profits). But they purchased $200 worth of new capital goods. Where and how do you think they obtained the additional $75?

Model Answer: The consumer sector saved $105 in banks, financial institutions, or in their homes. Businesses were able to borrow the $75 they needed from these sources.

e) The government ran a deficit of $30. Where and how do you think they obtained the addtional $30?

Model Answer: The consumer sector saved $105 in banks, financial institutions, or in their homes. The government was able to borrow the $30 they needed from these sources.

f) Suppose that consumers had spent all their disposable income and saved nothing. What consequences could this have produced in Kowa in the next year (1966)?

Model Answer: Businesses would not have been able to buy all the capital goods they needed for expansion and consequently they would have to be content with only $125 of new capital goods. In 1965, the government would have been forced to increase taxes by $30 or reduce their spending.

Background Data and Table for Exercise 1

Data for Kowa, 1965

1. Businesses paid out $800 in wages, $50 in rent, $125 in interest, and $100 in dividends to the consumer sector.

2. Businesses saved $75 for the depreciation of equipment and retained $50 of their profits toward the purchase of additional capital goods.

3. Businesses paid out $100 in taxes and consumers paid out $200 in personal taxes.

4. Government transferred $30 to consumers for Social Security benefits and unemployment compensation.

5. Consumers purchased $800 worth of goods and services from producers.

6. The government purchased $300 worth of goods and services from producers.

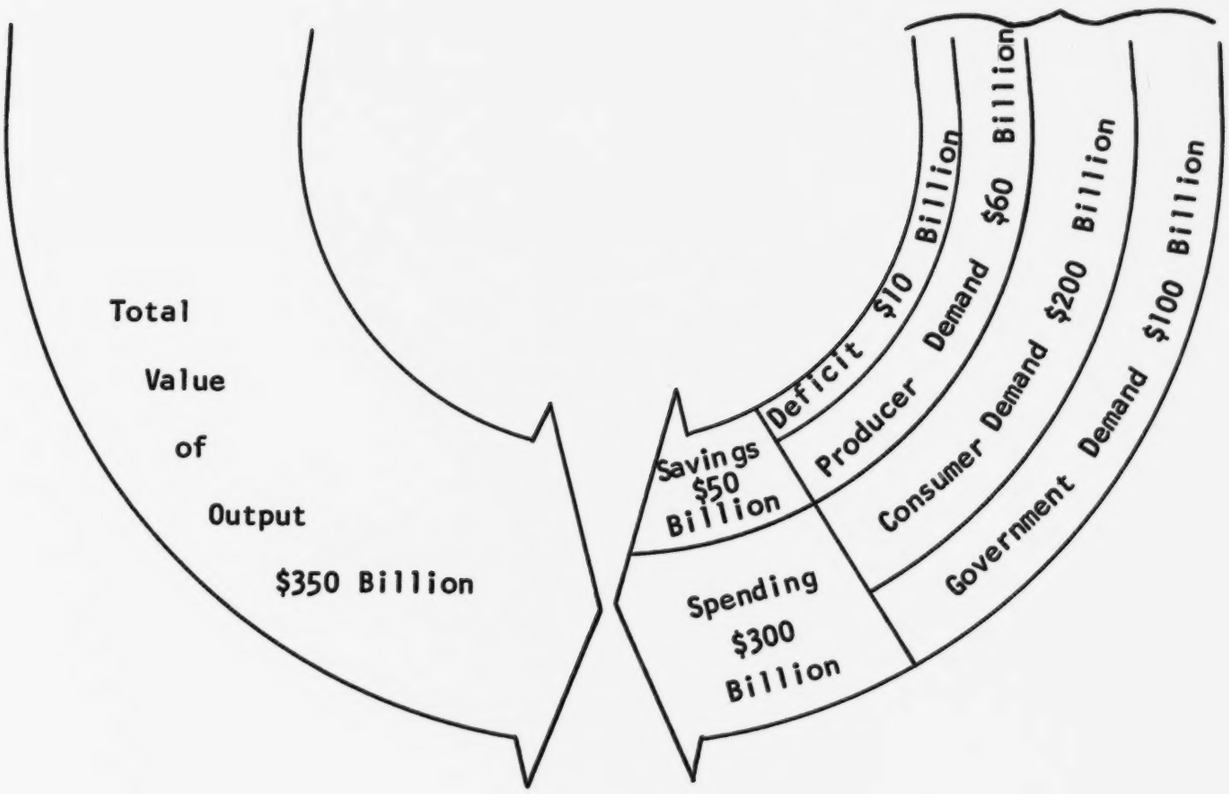
7. Businesses invested $200 in new capital goods.

Table for National Product System, Kowa, 1965[1]

Flows for:	Producing		Consumer		Government		Savings & Investment	
	Out	In	Out	In	Out	In	Out	In
Payments to Factors of Production:								
Wages	800			800				
Rent	50			50				
Interest	125			125				
Dividends	100			100				
Business Saving:								
Depreciation . .	75							75
Retained Profits	50							50
Business Taxes . . .	100					100		
Personal Taxes . . .			200			200		
Government Transfers				30	30			
Personal Consumption:								
Expenditures . .		800	800					
Government Purchases		300			300			
Domestic Investment:								
Capital Goods . .		200					200	
Government Saving . .					-30			-30
Personal Saving . . .			105					105
Totals	$1,300	$1,300	$1,105	$1,105	$300	$300	$200	$200

[1]Table was filled in by the students.

Diagram to go with Exercise 2



Exercise 2

Directions: Study the diagram on the opposite page and then answer the questions below. Assume here that resources are being used to the fullest extent.

a) What type of disequilibrium does this diagram represent? Check answer in proper space to left.

( ) a. inadequate demand
(X) b. inadequate supply
( ) c. inadequate savings
( ) d. inadequate spending

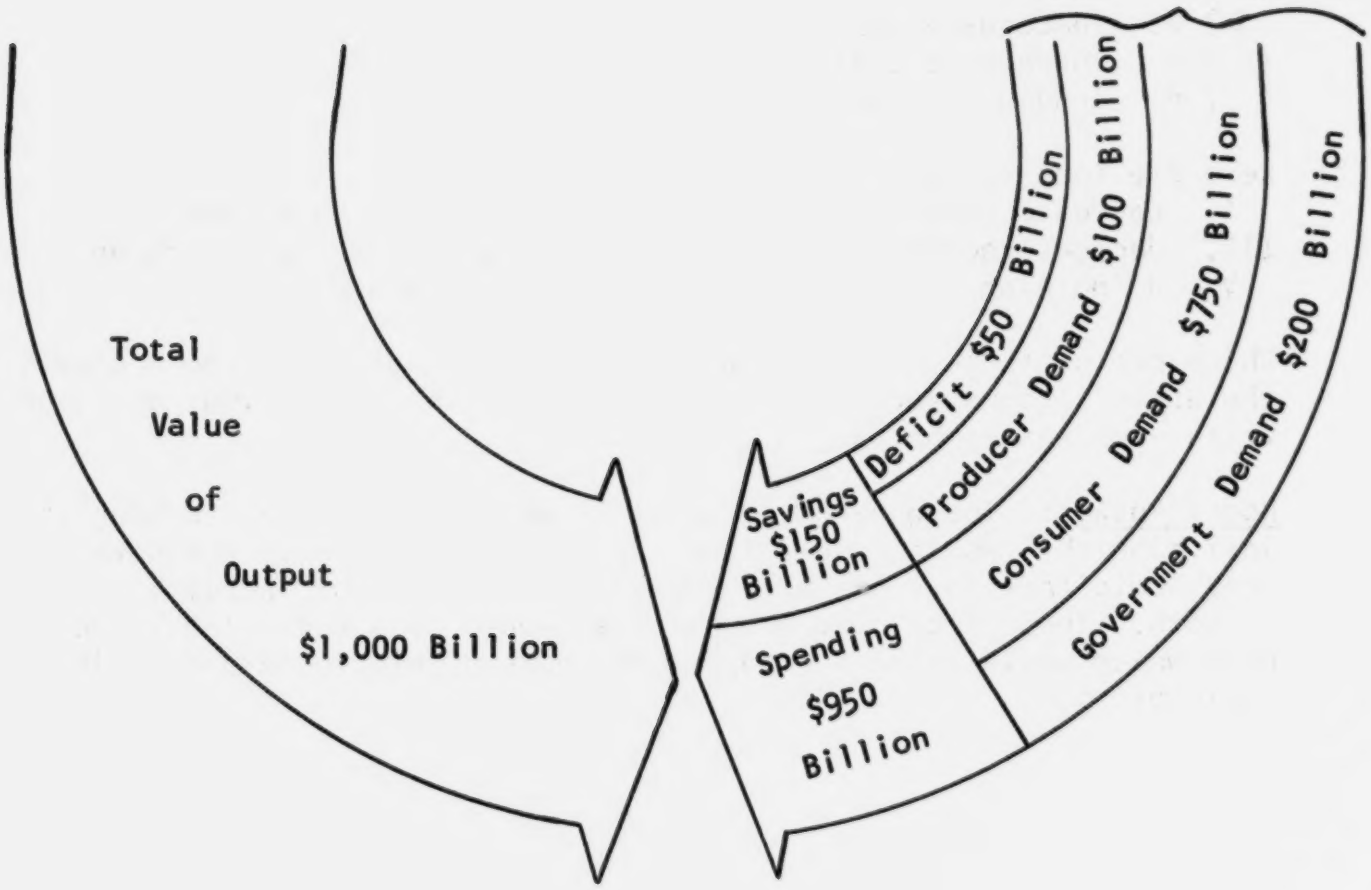
b) Here are some examples of governmental policies:

I. decrease taxes
II. increase taxes
III. decrease government spending
IV. increase government spending
V. do nothing

Which one of these, or combination of these, would you choose under the above circumstances? Explain the reasoning behind your decision. Write your answer below.

Model Answer: The government policies would be aimed at curbing the inflation that would result from the given conditions. The government would therefore either decrease its spending or increase taxes or both. The effect of these policies would be a reduction in demand which would bring the supply and demand relationship more into equilibrium.

Diagram to go with Exercise 3



Exercise 3

Directions: Study the diagram on the opposite page and then answer the questions below. Assume here that resources are NOT being used to their fullest extent.

3.1 What type of disequilibrium does this diagram represent? Check answer in proper space to left.

( ) a. inadequate demand
(X) b. inadequate supply
( ) c. inadequate savings
( ) d. inadequate spending

3.2 Here are some examples of governmental policies:

a. decrease taxes
b. increase taxes
c. decrease government spending
d. increase government spending
e. do nothing

Which one of these, or combination of these, would you choose under the above circumstances? Explain the reasoning behind your decision. Write your answer below.

Model Answer: Government policies would be aimed at supporting the economic growth that would result from the given conditions. If a slow growth rate seemed desirable, the government would do nothing to change its existing policies on taxes and spending. If an accelerated growth seemed desirable, it would cut taxes and increase government spending.

Question 4

Units 1-6 dealt in one way or another with the concept (idea) of Scarcity. Write a few sentences telling how Scarcity is related to Unit 7 on Flows.

Model Answer: In the first six units on Scarcity, we studied each of the four basic economic decisions faced by society. To make the analysis of each decision clear, we separated the four decisions and treated them in order. In reality, however, these decisions are not made separately or in sequence. They are constantly interacting. We need another set of analytical ideas to carry our economic reasoning forward. Unit 7 on Flows introduces the idea of continuous interaction in an economy by picturing a dynamic model in which the continuous flow of goods and services is seen in relation to a continuous flow of money.

Question 5

Unit 5, Stimulating Efficiency, introduced you to the idea of productivity (gains in efficiency) as measured by the amount of output obtained from a given amount of input. Unit 9, Definition of Economic Growth, introduced you to the idea that changes in population affected the growth of the economy. How would you relate the concept of productivity to a discussion of changes in the per capita real GNP over a period of years?

Model Answer: A change in per capita real GNP over a period of years may be caused by increased inputs (more people working longer and harder), or by increased productivity (more efficiency in production due to specialization, scale of enterprise, new science and technology, and increased motivation and education), or by a combination of increased inputs and increased productivity. Since gains in productivity allow members of a society more time for leisure and an increased standard of living, this source of economic growth is very important in most societies.

Question 6

What is the advantage of the so-called "four-fold division" of the economy, over the "two-fold division," in studying the flow of goods and services and the flow of money? Explain briefly.

Model Answer: The "two-fold division" of the economy separates goods and services used primarily by producers from those used by consumers. This division is useful for studying the decision made by a society about what to produce. In a rough sort of way, we can measure the amount of goods and services produced for present consumption against those produced and used to increase production in the future. The "two-fold division," however, is not useful when we try to analyze the process of changing the size of the GNP. For this, we need to separate the economic activities of a society into four components: Business, Consumers, Government, and Foreign. This "four-fold division" permits us to trace the interaction of the flows in and out of the four sectors named above and thereby locate the sources of change.

Question 7

Tell in a few sentences what is meant by "the multiplier" in economics. Then explain briefly how the multiplier helps us understand better the workings of our economy.

Model Answer: A change in the spending or investing activities of one sector of the economy produces a change in the spending and investing activities of the other sectors. How much will a change in the activities of one sector affect the total economy? The theory of the multiplier attempts to give us a guide for answering this question.

Over-all Summary of Results for Exercises and Questions for Units 7-11

Exercise 1(a)

Several groups mastered the details of income accounting but were unable to answer the (b), (c), (d), (e), and (f) parts of the question.

The predominant errors in the Kowa chart appeared in entering items on savings and investment. Government savings, personal savings, and domestic investment were omitted or entered incorrectly by most of the students. Business savings - depreciation and retained profits - were missed as a unit, and usually in addition to the above items.

On the whole, the other items were correctly entered.

Exercise 1(b)

Most of the students missed this question. Some of them added all of the totals and some took the totals from the wrong columns.

Exercise 1(c)

Most of the students missed this question. They used the total from the correct column - "Consumer, In" - but they failed to subtract "personal taxes" from the total.

Exercise 1(d)

Students had a vague conception of the immediate sources of the additional $75 that was needed, but they did not make specific use of the accounts in the Kowa chart. They expressed the source in terms of selling more stock, previous savings (which was erroneous), current savings (which were also absorbed in the $125), and borrowing money. They did not clearly state that savings originated with the consumer sector.

Exercise 1(e)

Students' answers were similar to those in 1(d) in that they gave immediate sources of the additional $30 that was needed without referring to the Kowa chart. For example, most of the students said that the money would be secured from bonds or taxes. Again, they did not state it in terms of the broader concept of consumer savings.

Exercise 1(f)

Up to a certain point most of the students' answers were good. They were aware that possibly less would be produced or the GNP would be affected; but few of the students explained that production, and especially growth, depended specifically on the lack of funds for investing in capital goods. Many of them took the consumer's standpoint and said that consumers could not buy as much because they had no savings (without consideration for current income); they also predicted unemployment and depression.

Exercise 2.1

Most of the students recognized the problem of inadequate supply.

Exercise 2.2

Students were able to determine one of the government policies and many mentioned two of the policies but very few said that either an increase in taxes or a reduction of government spending or both policies were applicable to the situation. However, many students noted conflicting policies such as, increase taxes and increase government spending.

Explanations of these policies were usually brief, and most students were vague in their reasoning concerning the effect of government spending. Many of them explained the effect on wages and unemployment rather than the effect on demand and savings for the purpose of increasing production.

Exercise 3.1

Most of the students recognized the problem of inadequate supply in the flows in the diagram.

Exercise 3.2

Students were less accurate in their selection of policies and in their reasoning for the economic situation in which resources were not being used to their fullest extent. They did not clearly state the reasons for their selection of policies and they tended to be most vague about the effect of government spending. Few students recognized the possibility of doing nothing, thus giving the market operations an opportunity to stimulate production in order to increase supply.

Students did not recognize the effect of these policies on the amount of growth that would be desirable; consequently, few students said that one of the policies could be to "do nothing."

Question 4

The sample tended to relate the concept of scarcity to resources and wants in general, rather than to the four basic decisions. Even the students who developed the relationships seemed to be satisfied with an understanding of scarcity without the understanding of the four basic decisions for dealing with the scarcity.

There was a tendency to establish relationships at the level of a predetermined supply and demand, and from this point to show relationships to Unit 7. Having lost sight of the desisions, students dealt vaguely with supply and demand. Consequently, they saw the relationships without the dynamism.

No references were made to the static quality of scarcity in Units 1-6 and the dynamic quality in Unit 7. The flow of goods and services and the flow of money were treated as totals or re-arrangements of individual transactions. As a total or re-arrangement, Unit 7 was significant to them because the flow of goods and services and the flow of money interacted and resulted in price changes, changes in wages, increased or decreased production, or disequilibrium. This interest in the results of the flow of money overshadowed any interest in the four basic decisions. Students related results of the interaction which stemmed from supply and demand (which was used very loosely), rather than the interaction that stemmed from the four basic decisions.

One other approach was common. Some students recognized scarcity of the factors of production in Units 1-6 and transferred this scarcity directly to scarcity in the flows without regard for the process of dealing with this scarcity--namely, the four basic decisions. Furthermore, there was little evidence that they thought of scarcity in Units 1-6 in static sense.

Question 5

No one in the sample considered the three alternatives for increasing production. Few accurately related increased production by one means or the other to changes in per-capita real GNP. (Additional inputs were usually omitted.) Many did not thoroughly understand the meaning of the terms "productivity", "per-capita", "GNP", and confused them with "production" and "population".

Increased production was treated as a natural response to the demand created by an increase in population. Some students digressed

from the force of demand to include prices, jobs, and wages in their explanation. In some cases productivity and inputs were used synonymously.

Very few approached the answer from the point of changes in per-capita real GNP; the approach usually began with the response of increase in production to an increase in population--usually not relating it to per-capita GNP. Few students explained how economic growth could result from increased production.

Question 6

Undue importance was attached to the relationship of the four-fold division and the two flows as though the two flows pertained only to the four-fold division--and not the two-fold division. There were some definite indications that students were thinking of the interaction between the producer and consumer in the two-fold division, instead of the flows of producer and consumer goods. Any detailed "explanations" consisted of <u>descriptions</u> of the four sectors in relation to the flow of goods and services and the flow of money.

Question 7

Generally, the sample of students did not fully understand the relationships involved with the multiplier. Some saw the effect of the expenditure and investing activities of one sector in relation to another sector, but more often they saw it and the activities of one sector in relation to the entire economy. The indication of these effects were varied, including growth but also stability, equilibrium, depression, recession, and efficiency.

There were several inaccuracies in attempts to explain the meaning of the multiplier. Students were aware of the chain reaction, but most often explained it within one sector; usually they explained it in terms of creating money.

Interpretation of Results on Exercises and Questions for Units 7-11

Exercise 1(a)

Students did not make the transition from the two-fold to the four-fold structure for studying the economy, that is, they did not understand the use of money that was not spent for goods and services. In the two-fold division, it was assumed that all income was used for buying goods and services. In the four-fold division, savings and investment must be accounted for; the students did not understand the flows in and out of savings and investment account.

The lack of ability to interpret the chart indicated that too much emphasis had been placed on the mechanics of income accounting and too little on relationships.

Exercise 1(b)

Although a few of the answers were incorrect because of errors in individual items, most of them indicated that students did not understand GNP because the amounts given were not the total of the "Producing, Out" column.

Exercise 1(c)

Students did not distinguish between "personal income" and "disposable personal income"; therefore, they failed to subtract personal taxes from the total consumer income.

Exercise 1(d)

Students were unable to generalize that the source of savings for business needs was in the consumer sector, although they mentioned several immediate sources of funds such as loans, stocks, and bonds.

Exercise 1(e)

The students who answered 1(e) answered the question on a level similar to that of 1(d). They failed to advance beyond the level of understanding the immediate sources of money for investment purposes, to the more general concept, namely, that money must be secured from the savings of the consumer sector.

Exercise 1(f)

Many of the students were apparently not aware that the lack of savings made it impossible to buy capital goods, and many of them did not consider that production could continue without growth as the result of the lack of consumer savings for investment in capital goods. The direct relationship of investment to consumer saving was not clear to some of the students.

There was much interest--erroneous and otherwise--concerning the direct effect on the consumer rather than the effect on the producer.

Exercise 2

The students understood the diagram but most of them were unable to interpret it fully for the purposes of formulating governmental policies. Their reasoning was faulty with respect to the effects of government spending. Possibly, they were oriented to the effect of taxes. On the other hand, their orientation to government spending was vaguely associated with employment. Likewise, many of the students were thinking in terms of money flowing into the government account and not being spent by the government, rather than the purpose of these policies, namely, to bring about equilibrium.

Exercise 3

Students either did not read the directions carefully or they did not distinguish between the policies that would be applicable to the condition of inadequate supply relative to full use of resources and partial use of resources. They tended to answer the question as though resources were being used to the fullest extent.

As in Exercise 2, students interpreted the effect of government spending on wages and employment and not the effect on the economy as a whole.

In many cases, the level of understanding of the market and the influence of government policies was on the level of isolated situations instead of the effect on the economy as a whole. Likewise, students did not consider that these policies were measures for controlling growth under conditions of partial use of resources, namely, slow growth or accelerated growth.

Question 4

The weakness would appear to have lain in the perspective of Units 1-6; either it was developed too slowly or it was not "pulled together" before making the transition to Unit 7. This proper

perspective, or nature of the static model, could have been established in a summary at the end of Unit 6; or, frequent reminders may have been needed in Units 3, 4, 5, and 6, that these decisions are due to scarcity of the factors of production, all of which will be revealed in the flows--thus forecasting the dynamic model.

These indications of insufficient emphasis on the nature of the static model, not the nature of the dynamic model, apparently resulted in no distinction being made. The greater interest shown in the dynamic model may have been an assumption that the static model was unrealistic and disregarded in favor of the more realistic dynamic model.

The weaknesses of the Economica story may have accounted for the failure to see constrasting models. The previous learning situation--The Route of the Suit--explained the chain of related events and income in a realistic setting; the change to the fantastic setting of Economica would tend to draw attention away from the important transition from the "Suit Story" to an economic system. If the "Suit Story" could be extended to include decision-making, as well as income, and if it could become a part of the dynamic flow of goods and services and the flow of money in an economic system, students probably would see both the relationship and the development of the dynamic model.

Also, in the "Route of the Suit", references could have been made to the four basic decisions in producing the suit whereby the most value was added; this might have related the two models. At the same time, some of the physical details of producing the suit might have been minimized for the sake of the length of the story.

Question 5

The failure to do well on the question resulted partly from lack of understanding of the term productivity, per-capita, and GNP.

The brief, seemingly automatic response of increased production to demand suggested a generalization that students had "learned" but did not completely understand, especially when they digressed from the point of the question to explain the effect on prices and wages. They were insecure in correlating increased production and changes in per-capita GNP; consequently, they did not see the "mechanics" for economic growth (increased inputs and/or increased productivity).

If students had approached the answer from the point of per-capita real GNP--first noting current production, then the effect of an increase in population without an increase in production, then, an increase in population <u>with</u> an increase in production by one of the two means, and finally an increase in production (by one of these means) beyond the current per-capita GNP, they might have identified economic growth. Their approach (increased production in response to increased

demand) brought them to a "dead-end" with per-capita GNP remaining the same, thus not explaining growth.

Unit 9, third situation, p. 162, compared changes in per-capita real GNP and searched for the causes. It pin-pointed economic growth in this way: "The ability of a society to increase real GNP faster than the increase in population." (Student Materials) Considering the very few cases in which this procedure was used to analyze growth, one might conclude that the materials were not followed by the teacher nor understood by the students.

There apparently were no situations in the student materials nor references in the teacher's materials that attributed increased production to the demand created by an increase in population--such as the students used in answering the question. It may have been suggested in the explanation of the profit motive as one of the causes of increased productivity. This was another indication that the materials were not used verbatim in the study of economic growth.

This section might be subject to revision on the grounds that it may be better to eliminate some details, rather than to have teachers omit them because they appear to overwhelming.

Question 6

Many of the students have grasped the idea of how the flow of goods is divided among the four sectors, but they do not understand how this information can be used to determine which sectors should be stimulated to produce economic growth.

Perhaps the term "GNP" should have been introduced at the time the two-fold division was introduced in Unit 2 so that the four-fold dividion is understood as an alternative breakdown of goods and services and not mistaken for additional sectors of the economy, which it appears to have been. During the discussion of the factors of production in the lesson situations, the emphasis was placed on scarcity and allocation. Simply to illustrate them within the flow-of-goods-and-services "arrow" may help the students to see the component parts of the two-fold division in contrast to the component parts of the four-fold division when the latter is introduced (as well as to see the development of the dynamic versus the static models when the flow of money is introduced). As a result of identifying GNP and visualizing its components in a two-fold division, students should be better prepared for the new terms in Unit 10.

Summaries might have served the same purpose. Unit 2 might have been summarized with the idea that the combination of the factors of production makes up the GNP in the two-fold division. At the end of Unit 3,

students could have learned that this is how they are allocated to satisfy the most wants and at the same time to produce the maximum GNP. These references were clearly stated in the teacher's materials but lost in the student's materials.

Having acquired this background, students would be better prepared for the new breakdown of the flow of goods and services in Unit 10. As a result, they can not only learn it, but they are also ready to apply it.

It is possible that the teacher did not apply his materials to the learning situations in Units 2 and 3 because he did not have the perspective of the course, or did not give it sufficient emphasis because it was not included in the student materials. Unit 10, without this background, could prove difficult.

Question 7

On the whole, the students in the sample failed to organize their understandings in such a way that they knew the meaning and purpose of the multiplier. The various scattered ideas that they expressed indicated that they had covered the materials and recalled it in segments rather than as a concept.

The development of the idea of the multiplier was rather involved and students probably got lost in the details. The student materials were clear but they would require that the teacher supplement more than had been required in other units. For a teacher who did not already understand the multiplier, the combination of teacher and student materials would require much preparation on the part of the teacher.

One class had apparently studied Unit 12 before taking the test. All of them used the bank as an example of the multiplier. No doubt this stemmed from the mention in the teacher's materials, p. 259, that the formula for creating money through bank loans was the same as the multiplier formula. Possibly it should have been noted in the teacher's materials, p. 259, that the creation of money by means of bank loans is <u>not</u> an example of the multiplier.

Most of the emphasis in the student materials was directed toward the effect of a change in the level of expenditures on the entire economy, which was well explained by the "Multiplier Episode." It is suggested that the sector-to-sector changes in spending and investing activities be clarified in the discussion following this story and chart.

Written Exercises and Questions for Units 12-14,
Including Model Answers

Exercise 1: International Balance of Payments

Read the following imaginary account.

Mr. Litmus is a chemical engineer for Chemo-Tech, Inc., an American company. The company has sent him to Algeria (Africa) for one month to help supervise the building of a chemical fertilizer plant, to be jointly owned by the Algerian government and Chemo-Tech, Inc. In making this trip, Mr. Litmus of course participated in the export and import of goods and services.

Classify each item in the list below as Export, Import, or Neither. Mark an X in the proper box to the right.

	EXPORT	IMPORT	NEITHER
Mr. Litmus bought a ticket to travel to Africa on a British airplane for $475.		X	
When he arrived in Algeria, he rented an apartment for which he paid $500 in American dollars.		X	
He requisitioned additional supplies from Chemo-Tech, Inc., costing $25,000 and paid for by the Algerian government.	X		
He rented a car for $40 and toured the area at the expense of the Algerian government.			X
While on the tour, a social worker for the Relief Fund asked him for a contribution. He gave $25.		X	
He took a Mediterranean cruise on an Italian ship at a cost of $300.		X	
While the ship was embarked at a port in France he sent gifts of perfume and art works to his family. The total cost of the gifts was $100.		X	
Mr. Litmus had been instructed to invest an additional amount of money in the joint project if all appeared to be going well. He invested $500,000 on behalf of Chemo-Tech, Inc.		X	
The Algerian Government paid his salary, which was $2,000.	X		
He purchased a ticket for his return to the United States on an American ship. It cost $250.			X

Exercise 1 (Continued)

Using the data on the previous page, enter the appropriate amounts in the columns below and then total. Use as many spaces as you think you need in each column. Receipts and payments refer to the balance of payments for the United States.

RECEIPTS	PAYMENTS (Expenditures)
$25,000	$ 475
2,000	500
	25
	300
	100
	500,000
Total $27,000	Total $501,400

Surplus or Deficit $474,400

Considering that this represents one case in the entire network of international trade, what effect did Mr. Litmus's trip to Algiers have on the balance of payments? Check space to left of your choice.

___ A. It had no effect on the balance of payments.

___ B. It offset the unfavorable balance of payments.

X C. It contributed to the unfavorable balance of payments.

Question 2

In many German Prisoner-of-War camps during World War II, some American prisoners devised ways of obtaining extra food, clothing, and other physical comforts. Red Cross packages usually contained, in addition to food, such items as cigarettes. Many prisoners became rich in

cigarettes through not smoking themselves and they used their supply to obtain extra food and extra privileges from their German captors.

(a) In the above situation, what main functions did cigarettes serve or perform?

Model Answer: Cigarettes were the money that the American prisoners used to obtain food, etc. They served as a medium of exchange, a measure or standard of value, a store of value, and a vehicle for transferring purchasing power.

(b) In the above situation, what requirements of money did cigarettes fulfill?

Model Answer: Certain basic requirements of money are necessary in order that cigarettes be used satisfactorily. Cigarettes were an acceptable medium. The uniform qualities and quantity gave confidence as a basis for exchange. The size of the package of cigarettes and its capacity for division into smaller units contributed to a manageable form. For the above reasons and because they were made available by Red Cross packages directly to the prisoners, they were convenient.

Question 3

Describe the conditions that lead a country to create and accept banks and other financial institutions.

Model Answer: As a society increases in size and industrial complexity, changes in the flow of money, which result from decisions of the consumers, seasonal needs, and technological change, give rise to a need for flexibility of money in the economy; banks and financial institutions can maintain an acceptable degree of stability by influencing the direction and quantity of the flow of money. Likewise, there is a need for efficiency in borrowing and lending money and in making transactions.

Question 4

How do banks create money?

Model Answer: Banks create demand deposits be lending money; thus, money is created. The amount of the loan is limited by the F.R.B. requirement that a 20% reserve be kept on hand. When the loan is made, although no money is given to the borrower, the demand deposit that has been created is used as money. The borrower draws checks on the account and the payee of the check deposits the check in the same or another bank. Because of this deposit, another demand deposit may be created; the bank holds 20% of the amount as reserve and creates another demand deposit for another borrower in the amount of the balance. This

continues until the amount of the original demand deposit has been loaned as many times as possible after subtracting the 20% reserve each time.

Question 5

Why do most industrialized societies want a flexible money supply even though this flexibility may contribute to an instability of prices and wages?

Model Answer: An industrial society is constantly interested in increasing the total output of the economy. Increased output requires that more money must be readily available to handle the increased number of exchanges. This interest in economic growth results in a need for a flexible money supply. However, a flexible money supply means running the risk of instability in prices and wages; but, too much instability is not real economic growth when instability is excessive and results in inflation or recession. An increase in the money supply gives confidence to persons in the economy and funds for more resources and expansion.

Question 6

(a) If exports amount to only 7% of the GNP, why are they so important to economy?

Model Answer: Many industries depend upon exports for the bulk of their trade such as cotton and grains. These industries in turn have a wide effect upon the total GNP, and employment rates would fall considerably, exerting a drag on the entire economy. Our economic life is also closely connected with our political stability and world leadership.

(b) Why are imports important?

Model Answer: Many industries depend almost solely upon imported goods for their raw materials, of which examples are aluminum, tin, and some foods. If our imports were cut off, these industries would collapse, and they are important components of GNP both indirectly and directly through other industries which use their product. This would also have a severe effect upon employment rates and in turn the multiplier would be changed.

Question 7

The United States has had an unfavorable balance of trade since World War II; during the same period exports have exceeded imports. Explain how this situation can exist.

Model Answer: Government spending on foreign aid and the military offset our favorable balance of trade. Tourists to foreign countries and industrial investment abroad (both short and long term) also have had an adverse affect upon the United States balance of payments.

Optional Questions

Unit 14 dealt with International Trade.

(a) Does the idea or concept of Scarcity have anything to do with this Unit? Explain.

Model Answer: Whether the exchange of goods and services is domestic or international, the individual who is working is "exporting" a good or service and "importing" his wants and needs when he spends his income. Scarcity applies to the world in the same way that it applies to the individual and nation. Domestic industries can better satisfy wants and needs by specialization. The same process applies to international organization of trade whereby scarce goods are traded between countries.

(b) Does the idea or concept of Flows have anything to do with this Unit? Explain.

Model Answer: In the economy, foreign trade is the fourth sector included in the flows of goods and services. As such, international trade is an extension of the flow of money and the flow of goods and services. Each item that is exported represents a sub-flow which is comparable to a breakdown of GNP into sub-flows. It is possible to look at each item to show its effects on the International Balance of Payments (the money flow) in the same way that we looked at the composition of the flows to influence changes in GNP.
Like the flow of money in domestic trade, the International Balance of Payments represents exports and imports in terms of receipts and payments. The difference is a surplus or deficit.

Over-all Summary of Results for Exercises and Questions for Units 12-14

Exercise 1

Most of the students did not understand the concept of exports and imports as related to receipts and payments of money. They were unable to classify exports and imports on the chart: some reversed the classification of the items and many did not correctly classify investments and the "neither" items. In transferring the export and import items to receipts and payments, some reversed the items again--transferring exports to payments and imports to receipts. Others did not consistently transfer export items to receipts and import items to payments.

In determining surplus and deficits and the effect on the balance of payments, many of the students were inconsistent in using the totals of the export and import columns.

In three schools, the teacher felt it necessary to give the class special instructions on the exercise; on the chart or the column headings, "exports" were supplemented with "receipts", and "imports" were supplemented with "payments". However, that help did not guide students through the problem as indicated by inconsistencies in the surplus and deficit items and the effect on the balance of payments.

Question 2(a)

Answers to this question were incomplete, and in many cases they were inaccurate--the functions and requirements of money were confused. "Medium of exchange", only, was given as the function of money, with the additional explanation that cigarettes were "used as" or "like" money rather than the fact that they were money. The function of cigarettes was compared with barter by some students. A few groups included "measure of value" and "store of value". Other groups described rather extensively how the cigarettes were exchanged for other goods with emphasis on the exchange; they did not attain the level of abstraction and explain the function of cigarettes as money in economic terms.

Question 2(b)

Many groups recognized acceptability as a major requirement of money. Conveniences were described, but not identified in economic terms. Students described exchange and used the terms "instead of" or "same as" money at a low level without transferring the ideas to a concept of the requirements of money. In many cases the teacher wrote functions of money such as "medium of exchange", "store of value", "measure of value" to supplement student answers to 2(b) instead of (2a).

Question 3

On the whole, students recognized the conveniences of banks, especially with regard to loans, and many emphasized the need for banks as a safe place to keep money, but they did not mention the increasing complexity of our economy which created the need for these conveniences. Also, they recognized the need for stability and flexibility which the banks could provide.

Few students attributed the need for banks directly to the growth and increasing complexity of our economy.

Some groups consistently gave single-sentence answers without explanations.

Question 4

In general, students understood that the creation of money originated with loans. Some described how loans were made and how the money was originally created, but only one group and a few scattered cases in other groups understood the consequences of the deposit in another bank, which created additional money.

Some groups had the misconception that money was created by means of interest on loans and investments in securities.

Many gave single-sentence answers that money was created by making loans but gave no explanation. Others gave brief explanations that became erroneous when they omitted the "step" of creating "demand deposits". Others omitted the explanation of the reserve requirement.

Question 5

The answers varied markedly according to groups. The most general responses of the groups which answered the question were related to the control for alleviating inflation and depressions. One group understood the stagnation that could result from the lack of a flexible money supply.

The responses of other groups were vague and irrelevant; such as, "easier to deal with", freedom and convenience, flexibility as synonymous with price changes. Many did not answer this question.

Growth was vaguely referred to in a few cases.

Question 6(a)

Basic trade of scarce goods was predominant in discussions of the importance of exports. The students recognized the immediate value or necessity of exchanging these scarce goods but few of them expressed the dynamic nature of these exports relative to industries that produced for the export trade. Likewise, most of the students described only the employment of those who transported and managed the business affairs for exports when relating exports to employment. These tended to overrate the amount of money and employment in the export business by their descriptions, which did not include the industries themselves.

Students of some groups referred to exports as outlets for surplus goods and concluded that the increase in GNP was only the result of a larger market.

Foreign relations were emphasized by several groups.

On the whole the answers were brief and incomplete.

Question 6(b)

Students, in general, expressed the need to import raw materials and goods to satisfy our wants, but they neglected to consider services. The importance of these imports was vaguely related to industries but not expressed to the extent that certain industries and growth could not conveniently exist without them. Some groups simply stated the facts without explanations. Employment was related to the import trade and in a few cases to the industries using these raw materials. International relations and balancing the exports and imports was stressed by one group.

Frequently, the student over-emphasized our deficiency in natural resources.

The answers to "a" and "b" sections were so general in some cases that they were overlapping or almost identical.

Question 7

Few students gave a complete answer to this question. In most groups, one or two of the reasons for our unfavorable balance of payments were given, but only in a few cases were the more sophisticated reasons given. There were cases of misconceptions of foreign trade suggesting unfairness and "cheating".

Three groups gave vague and irrelevant answers.

Optional Question (a)

Students related scarcity directly to the exchange of scarce goods as the reason for international trade. The concept of some was limited still further when they attributed scarcity to a scarcity of money or gold. (Others merely expressed our need for certain items.) None of the students explained the basic concept in economic terms of exporting goods and services and importing what one wants and needs.

Specialization was implied in a few cases, but it was not identified. The students did not show any comparisons between scarcity in domestic and international trade.

Optional Question (b)

The explanations of the flows were limited and general. The predominant tendency was to extend the descriptions of the flows to an explanation of the balance of payments and surplus and deficits; several students said that the purpose of foreign trade was to balance the flows. Only one group mentioned the possibility of analysis of the flows for the purposes of balancing them. None of the students recognized the foreign sector as the fourth sector of our economy.

Interpretation of Results on Exercises and Questions for Units 12-14

Exercise 1

The many inconsistencies and contradictions on Exercise 1 would indicate that students did not visualize the exchanges that were taking place; namely, exports of goods and services "out" and money "in", and imports of goods and services "in" and money "out". Answers to other questions indicated this same weakness; indications were that the students thought of exports "out" and imports "in" in relation to balance of trade, and money "out" and money "in" in relation to balance of payments without relating the two categories. Possibly it was overemphasized that money was not exchanged with each shipment of exports and imports.

This interpretation was further substantiated in a later question (optional "a" and "b") where many students did not recognize international trade as an extension of domestic trade.

Exercise 2

Teachers revealed by their notes on student test papers that they themselves did not make the necessary distinctions between the functions of money and the requirements of money, and some purely descriptive answers were marked "OK".

One group--a superior one--indicated the ability to make the transition from the concrete use of cigarettes to the abstract understanding of money.

Question 3

The students did not reach the level of understanding whereby they had insights into the increasing complexity of our economy; they did not visualize an era (historically) in our economy in which banks were not needed. The predominating response by many students was limited to the convenience of loans, which might have been overemphasized in the second learning situations concerning financial institutions in Unit 12.

In many instances students failed to revise some of their earlier concepts of money and banks: such as, banks as safe places to keep money; and interest as a means of creating money.

Question 4

The vague understanding by most students about how money is created began with a failure to distinguish between the money that was created (that it did not exist before it was created), and money that was gross profit derived from interest and investments (which was simply a transfer of money from the borrower or buyer of securities). In most cases, students had no concept of the dynamic nature of a loan. A few of the students made references to the multiplier concept which was erroneously applied to the creation of money and which was not explained sufficiently to indicate that they understood the resemblance to the multiplier effect, not the multiplier concept itself. Likewise, some of the students referred to the "reserve requirement" but were unable to explain it accurately. In summary, the level of understanding was low, although the vague use of the terminology indicated an "exposure" to the concept of how money is created.

Question 5

By the consistency of the kind of responses within the individual groups many of these false interpretations apparently had been taught. The extensive use of reading material instead of concrete learning situations could account for the kind of weaknesses that predominated, even among the better students: namely, that they did not discover the simple insights regarding the relative complexity of our economy and the need for flexibility. Instead, the students related flexibility to everyday experiences and observations such as might have been influenced by the news.

Apparently, they assumed that equilibrium was security against inflation or depression. As a result, they found no explanation for growth, nor a recognition that a certain degree of instability was acceptable and necessary for growth.

Question 6

The answers to this question, as well as to others that involved several answers, might indicate a lack of assimilation of the materials, perhaps due to inadequate time to learn. The students lacked insight into the effects of international trade beyond the observable and familiar exchanges. Few students discovered that international trade was an extension of domestic trade.

Students saw the advantages of exchanging scarce goods insofar as wants and needs were satisfied, but they did not understand the indirect increase in GNP that resulted from employment and trade beyond the immediate exports of 7%.

Question 7

Because of an error in the question, it was not possible to make an accurate interpretation of results. Some groups noted the error; however, these groups did not clearly understand the difference between balance of trade and balance of payments. The failure to understand the relationships was also apparent in optional question (b).

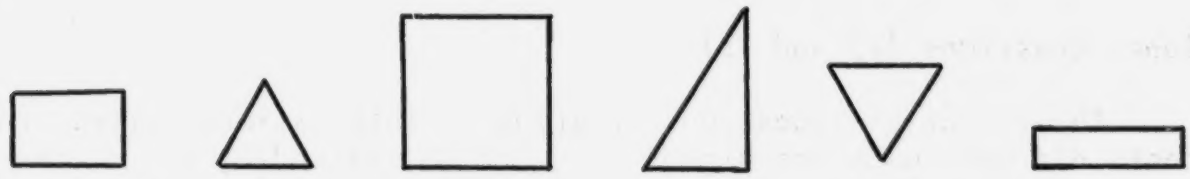
Optional Questions (a) and (b)

Throughout the questions relating to international trade, the students did not reach the higher level of understanding of international trade--namely, the distinction between the balance of trade and the balance of payments, and the need for analysis in order to understand the balance of payments. This was hindered by their inability to relate imports to payments and exports to receipts; in reality, it may have been a failure to identify receipts and payments with <u>money</u> and exports and imports with goods and services.

Special Written Questions Given at the Start and End of Course[1]

ALL FORMS

1. The following figures can be grouped. Suppose that for some reason you wished to sort the six figures into two groups.



A. B. C. D. E. F.

Indicate the figures you would place in each group by the letters under the figures.

Group one--

Group two--

Why did you group them as you did? (What reasons can you give as the basis for your two groups?)

What advantages do you see in grouping?

2. A tailor wants to make two suits but only has enough resources to make one suit. A baker wants to make a hundred loaves of bread but only has enough resources to make fifty loaves of bread. An automobile manufacturer would like to produce fifty thousand cars but only has enough resources to make twenty-five thousand cars. All of these men face a similar problem.

   a) How would you state the general problem that all three men have in common?

   b) What would these circumstances compel the three men to do?

   c) Now, think about the wants of a whole nation and the resources it has available. How is a nation's situation similar to the situation of the tailor, the baker, and the automobile manufacturer?

---

[1]Spaces for writing in answers are omitted here.

3. Consider the following definitions of a horse:

   1. A horse is a big animal.
   2. A horse is a big animal with four legs.
   3. A horse is a big animal with four legs that people can ride on.
   4. A horse is a large, solid-hoofed quadruped, domesticated since prehistoric times, and employed as a beast of draft and burden and for carrying a rider.

   a) What does this sequence of definitions suggest to you about the idea of definition itself?

   b) Can you think of ideas about money which you did not have when you were six years old. What does this suggest about the definition and your understanding about money?

FORM A

4. To build a house or make a suit or bake a cake, one must go through a number of steps and in a certain order. If one were reasoning out how to build a house, etc., what similarities do you see between building a house, etc., and reasoning about economics?

   a) Now, making a suit means that first the wool must be grown, then made into cloth, then into a suit, etc. Each person adds a little to the final product.

   b) The suit is finally sold for $40. Why did the suit sell for $40? As you answer this question, describe the reasoning that went into your answer.

5. a) Can you recognize any difference between these two statements?

   (1) Christopher Columbus discovered America.

   (2) Imagine you are Christopher Columbus discovering America.

   b) Now, can you recognize any difference between these two statements, and if so, what is it?

   (1) Specialists usually trade with one another.

   (2) I wonder why specialists trade with one another.

FORM B

4. The four fundamental operations in arithmetic are addition, subtraction, multiplication, and division.

   a) Group these four operations into two pairs:

   First pair--

   Second pair--

   b) On what basis did you group these?

   c) Can you group these four operations in some other way?

   First pair--

   Second pair--

   d) On what basis did you group the second set of pairs?

5. a) When your father goes to work, what relation do you see between his work and his ability to buy things?

   b) Suppose you were summarizing the relationship for all persons who work and the money these persons have to buy things. How would you state the relationship between total production and total income? Could the total income of a nation be less than the value of the total production? Explain.

   c) What would happen to production in a nation if every person saved his entire income?

FORM C

4. Suppose that you are in a helicopter over a small island for several days. You can see all the people on the island going to work, all the resources being transported and used, all the products in the marketplace, and all the buying and selling these islanders do.

   a) What questions might occur to you?

   b) If you saw all the parts of a motor spread on the floor, what questions might occur to you?

   c) Suppose someone suggested that all economic activity is tied together in terms of the supply of goods and services and the demand for goods and services. What do you think they would mean?

5. a) One theory says that bees communicate by dancing. Did you ever think of dancing as a means of communication? Whether you did or not, in what way does this idea affect your understanding of the meaning of communication?

   b) Sometimes people do not buy more of a product just because the price is lowered. If the price of a product were raised, would people always buy less of it? Explain your answer in terms of your understanding of the concept of prices.

Guide for Evaluation of Answers to Special Written Questions Given at the Start and End of Course

Question 1 - all forms

Points

3 FULL CONCEPT: Grouping, reasons for each group; advantages of efficiency, economy, and classification. These are treated as one unit for grading.

Model Answer: Grouping: ACF, BDE
They are grouped this way because ACF are all rectangles or have 4 sides or have 4 angles; BDE are all triangles or have 3 sides or have 3 angles. The advantages of grouping are (1) economy of time and effort, and (2) the advantages of comparison, contrast, identification, and facility of working with groups that are classified.

Example of Answers Given: "Grouping helps to keep more order; therefore, making work easier, faster and efficient."

2 PART OF CONCEPT: Grouping and reasons for both groups with one advantage clearly stated, or grouping, reasons vague or incomplete and one advantage clearly stated, or grouping and reasons clearly stated and one advantage vague.

Examples of Answers Given: "Easier (or easy) to find what you want, and have something in common."

"Keeps like objects together and simplifies identification--one advantage, facilitates work."

"Breaks down larger groups and easier to study smaller groups--economy of effort."

1 A POINT: If vaguely made, for advantages; it must be reasonable. All three parts must be answered.

Examples of Answers Given: "Putting like things together." (describes rather than giving advantages)

"The shape of them." (reason, not advantage)

"Can tell what group figures go in by number of sides." (vague and implies application to illustration)

0 NO CREDIT:

Examples of Answers Given: "I group them to the same class as each other; you can tell which belongs to which group." (too vague)

"Can match them up to be the same." (too vague)

Question 2(a) - all forms

Points

3 FULL CONCEPT: Scarcity expresses both wants and resources.

Model Answer: A scarcity of resources prevents each of these men from satisfying all of his needs.

Examples of Answers Given: "They all want to make more goods than they have resources to make the goods with."

"They don't have enough resources to make all the products they want to make."

2 PART OF CONCEPT: Clearly expresses either wants or resources; or expression of wants and resources is vague or incomplete.

Examples of Answers Given: "Each man has only half the amount of materials needed for all the products he would like to produce." (wants and part of resources)

"They don't have enough resources." (resources only)

"Desire for more; too few materials." (materials are only part of resources)

1 A POINT: It must be reasonable. Wants and/or resources are vaguely or incompletely stated.

Examples of Answers Given: "That the producer don't have enough material resources and that they should have planned for that certain day or year. All these men lack natural resources." (part of resources, only)

"The problem that arose in this story was due to the fact that in each of the three cases, only half the material of the required amount was present." (resources only and vague)

"All of them would like to make twice as much of the product, that they make, than they can." (wants, only and vague)

"All these men have only half the amount they would like." (vague)

0 NO CREDIT: Incorrect statement or too vague for points.

Examples of Answers Given: "They all have relative scarcity of things they want to make. All these men could only produce only have the resources. I should date the problem scarcity."

"They want to produce twice as much as they have."

Question 2(b) - all forms

Points

3 FULL CONCEPT: Efficient use of materials: compensation for scarcity by getting more resources; reduce wants.

Model Answer: "They would either get more resources, or use what they have and thus reduce wants, or use resources efficiently."

Example of Answers Given: None.

2 PART OF THE CONCEPT: Efficiency or scarcity (more resources and fewer wants expressed)

Example of Answers Given: "Make less, find more resources." (scarcity only)

1 A POINT: It must be reasonable. Only part of scarcity and reduce wants; or only part of scarcity.

Examples of Answers Given: "Get more resources." (only part of scarcity)

"Produce what they have resources for." (only part of scarcity)

"Either get what he wants or do without." (vague)

"Produce what they have. Get the money from the first half and make the next half."

"Try to get more materials for what he wants to do or forget about it entirely." (only part of scarcity and vague)

"To buy more materials or just make what they could." (scarcity incomplete)

0 NO CREDIT:

Example of Answers Given: "They should order more of the goods they need."

Question 2(c) - all forms

Points

3 FULL CONCEPT: Re-statement of (a) and (b) with application to the nation's economy--get more resources and have fewer wants.

Model Answer: For a nation there is a scarcity of resources. The nation as a whole must use resources efficiently, reduce wants, or get more resources.

Example of Answers Given: None.

2 PART OF THE CONCEPT: Efficiency or scarcity including resources and wants or a recount of possible solutions.

Examples of Answers Given: "Not enough resources to supply everyone in the nation with what he wants." (scarcity only)

"A nation has only a certain amount of some things available and if it is prosperous it will get more, if not, it will have to do without." (scarcity only)

"A nation has only a fraction of the resources needed to have work going at a maximum. So the nation, like the men, must make to do with what it has and strive to make the reasonable and efficient use of it." (efficiency and part of scarcity; missing--to get more resources)

"Sometimes there aren't enough resources to supply the entire nation so it has to get more resources or produce less." (scarcity only)

1 A POINT: It must be reasonable. Part of scarcity.

Examples of Answers Given: "We sometimes don't have enough resources to satisfy our wants."

"A nation cannot make more than it has in resources." (only part of solution to scarcity)

0 NO CREDIT:

Example of Answers Given: "A nation has to have a supply of resources, but the bigger the demand for resources, the bigger the supply."

Question 3(a) - all forms

Points

3 FULL CONCEPT: The more elements in the definition, the more complete is the definition, using the concept of unfolding.

Model Answer: It suggests that your understanding of a definition increases as you include more elements.

Example of Answers Given: "As a definition grows, it gets more specific. It begins with the most obvious things and gradually more detail is added to make the picture more complete. A definition can be simple or it can be more exact. A more exact definition might be preferred because it more closely describes the object in question."

2 PART OF CONCEPT: Any of a variety of single-element definitions.

Examples of Answers Given: "The definitions are longer, more full of explanations."

"As each new definition was added more knowledge has been gained." (not just "more knowledge" that is important)

"As it gets longer, it gets more specific."

"You can't describe something by using one idea. You must combine thoughts and ideas so you can get the full understanding of the subject."

1 A POINT: It must be reasonable, but may be only an observation of the example.

Examples of Answers Given: "It should explain as much as possible without repeating."

"Definitions have to be precise and to the point for people to understand the definition." (vague)

"That the definition may be short or long, although it has the same things." (an observation)

"A good definition must have all the important facts without a lot of blubber." (an observation)

"It shows that you can keep adding things to definitions until you have a whole report on horses." (observation and talking about horses instead of the idea of the definition)

0 NO CREDIT: Refers only to an observation of this definition of a horse and not to the concept of a definition.

Examples of Answers Given: "All four of them tell what horse is, though only #4 is needed." (not telling about a definition)

"A horse can be used for many things."

Question 3(b) - all forms

Points

3 FULL CONCEPT: (1) A concept about money which they did not have at six. (2) The more one learns about money, the more one sees in the definition of money.

Model Answer: An example: money measures value. Here is an added element in a more complete definition of money.

Example of Answers Given: "My ideas have changed as I have grown older. Each year something more was added to my understanding of money so that now my definition and understanding about money is much more complex than it was years ago."

2 PART OF THE CONCEPT: Either (1) or (2) above.

Examples of Answers Given: "This suggests that we add to our understandings of things such as money." (only the understanding of money)

"As your understanding increases, a definition is more exact and elaborate as the different views on money are described." (vague)

"As you grow older, you learn a little bit more about money, each new idea based on an old one."

1 A POINT: It must be reasonable.

Examples of Answers Given: "The older you get, the more you can understand or define." (emphasis on age, rather than understanding a definition)

"As people grow in knowledge, their understanding or ability to understand grows." (vague--definition or money?)

"That I learned more as I grew." (following suggestion of situation in the problem, only)

"Both began with simple, basic things, and gradually become more complicated." (an observation)

0 NO CREDIT:

Example of Answers Given: "Money is more important to me, now, because I have to buy a lot of things on my own." (relating what he is asked to think about in order to answer the questions)

Question 4(a) - Form A

Points

3 FULL CONCEPT: The steps in a process are stated for both the building of a house and for economic reasoning.

Model Answer: In building a house and in economic reasoning one shows how each step in a process is related to the next. The builder makes plans from the specifications in order to achieve his purpose. He follows the specifications, building first the main structure, then adding the trim. In the process, he is reasoning out how to build the house. The same process is applied to understanding economics. The basic concepts are the guides for building the structure. Having developed the structure, economic understandings may be developed to higher levels of understanding.

Example of Answers Given: None.

2 PART OF CONCEPT: Both processes are described but the explanation is vague or incomplete.

Example of Answers Given: "First of all there are many different items which help 'build' the economy. Just as there are many steps and people involved in building a house, there are also many steps and people involved in building or making our economy what it is."

1 A POINT: The explanation is reasonable but it does not apply directly to the processes.

Example of Answers Given: "One needs a definite pattern which will provide him a sound basis for his conclusions and enable him to arrive at his goal effectively."

0 NO CREDIT: One part only is answered and it is vague.

Example of Answers Given: "In building a house you have to decide the kind and style."

Question 4(b) - Form A

Points

3 FULL CONCEPT: The concept of "value added" is expressed at each step in a chain of related events. The total cost of the suit is the total of the steps in the process.

Model Answer: Producing the suit for $40 involves a series of related steps. At each step, value is added. The first step is the production of the wool for which the grower is paid for its value. When the wool is made into cloth more value is added because the manufacturer must be paid for the cost of making the cloth. The cloth is made into a suit and still more value has been added. The suit is purchased, transported and displayed in the merchant's store; more value is added because it is made available to the customer; these costs must be included in the price in order to pay the producers of these values. The total of all the value added is $40. We have shown step-by-step how the final figure was obtained.

Example of Answers Given: None.

2 PART OF CONCEPT: It includes value added, or describes the chain of related events, but not both.

Examples of Answers Given: "The reason the suit sold for forty dollars is that when the suit was being made it went through different steps so when each step was through this made the suit a little more valuable. So when the suit was finished its value totaled to forty dollars."

"The suit sold for forty dollars because the farmer charged for the wool, the mill charged for the cloth and the tailor charged for the sewing and these services came to $40. The reasoning had to be done in a certain order. You couldn't make a suit before the wool was grown."

1 A POINT: The answer is vague. It may be correct but it does not give the details.

Examples of Answers Given: "The suit sold for $40 because each person doing his part in a sequence must get paid and as each person gets paid the cost for the suit must grow larger for all producers to make a profit."

"The seller of the product has to pay for the materials in the suit and make a profit. In the long run, he is really paying for the seeds for the growing of the cotton and the cloth weaver. So when the suit is sold, everybody who helped in the production of the suit profits."

0 NO CREDIT:

Examples of Answers Given: "Cause $40 was all the suit was worth. Cause it may have been made with good cloth or poor cloth. It all depends on if the suit had good quality."

"The suit sold because the person that bought it could not do all these things himself. He paid $40 because he realized that there was $40 worth of work gone into making it."

Question 5(a) - Form A

Points

3 FULL CONCEPT: The difference between a fact and thinking about a fact is recognized.

Model Answer: The first is a statement of a fact; and the second is asking the reader to think about a fact.

Example of Answers Given: "(a) is just a statement, (b) would have you put a lot of thought into it."

2 PART OF CONCEPT: One part is accurate and the other part is vague.

Example of Answers Given: "One is a fact and one is imaginary."

1 A POINT: A restatement of the sentences with a vague distinction made between the fact and the request.

Example of Answers Given: "One says that Columbus discovered America and the other tells you to imagine you are Columbus discovering America."

0 NO CREDIT: Only one part is mentioned.

Example of Answers Given: "The first one is a fact."

Question 5(b) - Form A

Points

3 FULL CONCEPT: The fact is recognized as an economic fact; and the second part involves thinking about an economic fact.

Model Answer: The first part is a statement of an economic fact. The second part suggests that the reader think about an economic fact.

Example of Answers Given: None.

2 PART OF CONCEPT: The distinction between the two is vague and does not recognize the fact as an economic fact.

Example of Answers Given: "One is a fact and the other asks you to think about the fact."

1 A POINT: A point that is reasonable, but usually a simple restatement of the parts.

Example of Answers Given: "One is a fact and the other asks you to wonder why specialists trade with each other."

0 NO CREDIT: Only one part is mentioned.

Examples of Answers Given: "One is a fact."

"You don't understand why specialists trade with one another."

Question 4(a) - Form B

Points

3 FULL CONCEPT: Both parts of grouping are correct.

Model Answer: Grouping--Addition, subtraction, multiplication, division.

Example of Answers Given: "Addition, subtraction, multiplication, division."

2 PART OF CONCEPT: One grouping is correct; addition and subtraction, or multiplication and division.

Examples of Answers Given: "Adding, subtraction."

"Multiplication, division."

1 A POINT: It must be reasonable.

Example of Answers Given: None.

0 NO CREDIT: Neither grouping is correct.

Example of Answers Given: "Group one: Addition - Group two: Subtraction."

Question 4(b) - Form B

Points

3 FULL CONCEPT: Reason for each grouping is clearly stated.

Model Answer: Addition and subtraction are inverse operations or they are the opposite of each other.

Example of Answers Given: "Addition is the inverse of subtraction, and multiplication is the inverse of division."

2 PART OF CONCEPT: The reason for one grouping is clearly stated.

Examples of Answers Given: "Because multiplication is a short form of adding."

"I chose adding and multiplying because multiplying is a quick way of adding. I chose subtracting and dividing because when you subtract you take away from a number and when you divide you take away from the original number."

1 A POINT: One reason stated, but it is vague.

Examples of Answers Given: "You can check one with the other."

"They are the opposite."

0 NO CREDIT: The reason given is wrong or inadequate.

Examples of Answers Given: "These are the order in which I learned them."

"Adding and subtracting are easier than multiplying and dividing."

Question 4(c) - Form B

Points

3 FULL CONCEPT: Both parts of the grouping are correct.

Model Answer: Grouping--addition, multiplication; subtraction, division.

Example of Answers Given: "Addition, multiplication; subtraction, division."

2 PART OF CONCEPT: One part of the grouping is correct.

Examples of Answers Given: "Addition, multiplication."

"Subtraction, division."

1 A POINT: A point that is reasonable.

Example of Answers Given: None.

0 NO CREDIT: Neither grouping is correct.

Example of Answers Given: "Group one: multiplication. Group two: division."

Question 4(d) - Form B

Points

3 FULL CONCEPT: The reason for each grouping is clearly stated.

Model Answer: Addition and multiplication - multiplication is many additions. Subtraction and division - division is many subtractions.

Example of Answers Given: "Multiplication is just repeated additions. Division is just repeated subtractions."

2 PART OF CONCEPT: The reason for one grouping is clearly stated or both are vague.

Examples of Answers Given: "Multiplication is a fast way of adding."

"They are opposites."

1 A POINT: The reasons stated are vague.

Examples of Answers Given: "One makes the answer larger, and the other makes the answer smaller."

"In both addition and multiplication you add to, and in subtraction and division you take away from."

0 NO CREDIT:

Examples of Answers Given: "You divide a large number by a smaller number. You take one number an time it by another number."

"Addition and subtraction are the slower ways. Multiplication and division are the faster ways."

Question 5(a) - Form B

Points

3 FULL CONCEPT: Work, income as a payment for producing, and spending are clearly stated.

Model Answer: He produces goods and services for which he is paid; this is his income which determines the amount of goods and services he can purchase.

Example of Answers Given: "Total production is every product and service made in the country and total income is all the money that comes from consumers, producers, government, and foreigners to pay for the product."

2 PART OF CONCEPT: One of the three - work, or income, or spending - is omitted or "passive" and not related.

Examples of Answers Given: "Work to make money and used to buy things."

"To buy goods and services you must go out and make money to buy things."

1 A POINT: A point that is passive and vague and does not clearly state more than one of the parts - work, income, or spending.

Example of Answers Given: "When he works, he brings home pay. When he buys things, he spends."

0 NO CREDIT: The answer is not of an economic nature, erroneous, none of the three factors are coordinated.

Examples of Answers Given: "Production would rise."

"There would be an increase in the national debt and there probably would be inflation.

Question 5(b) - Form B

Points

3 FULL CONCEPT: Total income can not be less than total production.

Model Answer: No. Total income equals total production because income is the payment for producing.

Example of Answers Given: "In (a) you are stating a fact and leaving it as that. In (b) you are going to analyze that fact and try to gather more information about it to help you understand it."

2 PART OF CONCEPT: Production equals consumption. The relationship is vaguely stated.

Examples of Answers Given: "Because the workers spend money, production goes on. The more they spend, the higher wages become. Thus total income would have to equal total production."

"The amount of money he receives limits the amount of spending."

1 A POINT: States the relationship but does not give explanation.

Examples of Answers Given: "They are the same."

"Production is income."

0 NO CREDIT: Too vague or incorrect.

Examples of Answers Given: "Yes, it is. You spend 19% of your dollar; also have to make a profit on production."

"Total income is more because things are worth more than 100 years ago."

Question 5(c) - Form B

Points

3 FULL CONCEPT: Production depends on demand and the market.

Model Answer: Production would be reduced and eventually cease because consumers would not create a demand in the market for goods and services. Producers must have income from the sale of goods and services to continue production for the market.

Example of Answers Given: None.

2 PART OF CONCEPT: The lack of demand or market or production is explained clearly.

Examples of Answers Given: "Production would stop because consumers did not spend their money."

"There would be no more demand for production and the entire economy would collapse."

1 A POINT: A point that is vague, but the explanation is inadequate.

Example of Answers Given: "Production would stop."

0 NO CREDIT: The answer is inaccurate or too vague.

Example of Answers Given: "It would collapse. The money would not buy things to make tax; the government would fall."

Question 4(a) - Form C

Points

3 FULL CONCEPT: Recognizes communication in the market.

Model Answer: How do they know what, how, and how much to produce? How are these activities coordinated? How are decisions coordinated?

Example of Answers Given: None.

2 PART OF CONCEPT: Recognizes some sort of system with coordination, but is vague.

Examples of Answers Given: "What kind of economic system do they have?"

"What is their medium of exchange?"

1 A POINT: A point that is reasonable and is of an economic nature.

Examples of Answers Given: "What are their resources?"

"How do most of the people make a living?"

0 NO CREDIT: Questions that are not of an economic nature or are inaccurate.

Examples of Answers Given: "Where are the products going?"

"Who are they?"

Question 4(b) - Form C

Points

3 FULL CONCEPT: The student sees parts fitting together.

Model Answer: How do you put the parts together to make a motor? In what order are the parts assembled, and which parts are assembled first?

Examples of Answers Given: "How do the parts fit together?"

"How do you get it together again?"

2 PART OF CONCEPT: The idea of parts fitting together is vague.

Examples of Answers Given: "Where do the parts go?"

"Where do the parts belong? How much skill would it take to put it together?"

1 A POINT: A vague and inadequate question.

Examples of Answers Given: "What does each part do?"

"How are each used?"

0 NO CREDIT: Questions that are not of an economic nature.

Examples of Answers Given: "Who took the motor apart?"

"How long will it take to make a motor?"

"Where are the products going?"

Question 4(c) - Form C

Points

3 FULL CONCEPT: The functions of the producer and consumer are coordinated and determined in the market.

Model Answer: The producer must determine in advance what he will produce. The demands of the consumer will determine what, how much, and how the goods and services are produced. The kind and quantity of goods and services produced is determined in the market.

Example of Answers Given: None.

2 PART OF CONCEPT: Some activity of supply and demand is related, but the coordination in the market is vague.

Examples of Answers Given: "They would mean that in order for someone to buy a product or a service there would first have to be a supply of that good or someone willing to do that service and then there would have to be a want or need for the product or service there as a supply of. They'd mean that that last sentence was the whole idea of an economy."

"The basics of economy is producing to meet the public demands and selling to make more money to produce."

1 A POINT: The question is simply restated or the answer is vague and inadequate.

Example of Answers Given: "A greater demand for goods causes a need for a greater supply and service to manufacture these goods."

0 NO CREDIT: The activity or function performed is not of an economic nature or is inaccurate.

Example of Answers Given: "The less there is in supply, the more people demanded."

Question 5(a) - Form C

Points

3 FULL CONCEPT: Economic ideas are communicated between the producer and consumer in the market.

Model Answer: There are many ways of communication. Consumers communicate with producers by buying goods and services in the market. In this way the producer knows the demands of the consumer, and, in turn, he will produce these goods which consumers indicate that they are willing to buy.

Example of Answers Given: None.

2 PART OF CONCEPT: The market is not recognized as a means of communication.

Example of Answers Given: "There are many ways of communication besides talking."

1 A POINT: A point is vaguely expressed.

Example of Answers Given: "Talking is not the only means of communication."

0 NO CREDIT:

Example of Answers Given: "That there are a lot of ways of communication but the only one I know of is the human man."

Question 5(b) - Form C

Points

3 FULL CONCEPT: The demand for goods and services does not vary directly with the price. The demand for some will vary more than others, depending on whether it is a necessity or if there is a satisfactory substitution.

Model Answer: By buying the goods and services, the consumer communicates the idea that the goods are a necessity or have a value greater than other goods for which he may spend his money.

Example of Answers Given: None.

2 PART OF CONCEPT: Necessity, only, is mentioned; communication is disregarded.

Example of Answers Given: "Yes, the consumer may buy the goods at a higher price if it is a necessity."

1 A POINT: A point that is reasonable, such as relating quality of the goods at the higher price.

Examples of Answers Given: "When the price is lowered people might not want the product because they might think it isn't good if it's so cheap. When the price is raised some people might think that the product is pretty good if it costs so much and they would buy it. I think that probably if the price was raised none of it would be sold."

"If a price is low the people might not buy it because they think the quality is low also. If the price is high they think it is a good product so they buy it."

0 NO CREDIT: Failure to recognize that the demand for some goods does not change with price changes.

Example of Answers Given: "People buy as much as they can afford to buy. If a person was average and couldn't afford to buy much of a certain product, he would probably wait until the price was lowered before he bought very much."

Summary of Changes on the Special Written Questions Given at the Start and End of Course

Question 1 - all forms

Statistical gains on this question were very significant. Grouping was inherent in the course, especially in the grouping of the concepts into the basic areas of scarcity, flows, and coordination. On the pre-test, the students were able to do the grouping but they were unable to explain the reasons for grouping. However, on the post-test the students were able to give better explanations of grouping after they had used it throughout the course.

Question 2(a) - all forms

The average gain in understanding of scarcity and its relation to resources was small, though one should note that the initial level was relatively high. On the pre-test, the understanding of resources was limited to materials or natural resources. On the post-test, the students' terminology and ability to define the situation showed definite improvement because they understood resources on a more sophisticated level to include land, labor, and capital. This was an economic question that involved the well-defined learning situations in Units 1 or 2.

Question 2(b) - all forms

On the whole, the students made only a small gain because they were unable to pass beyond the rather obvious commonsensical solutions at which they arrived on the pre-test. They were unable to relate the problem of efficiency to this question. Although this was in the materials, it required more extrapolation than the students were capable of making.

Question 2(c) - all forms

The average gain on this question was rather large, better than a half point, as the students were able to apply the concept of scarcity. Still, even on the post-test, the students were unable to go beyond this to give possible solutions to the problem of scarcity. They were unprepared to make meaningful extrapolation from the materials. The students drew upon the material presented in Units 1 and 2 for their knowledge of scarcity and resources.

Question 3(a) - all forms

Gains were small but statistically significant on this question. The course apparently gave limited opportunities to acquire this kind of sophistication except in asking the students to make their own definitions upon various occasions. On both the pre-test and the post-test, the students did little more than make observations of the question. On the post-test, however, a few students were able to see the question as a whole and transfer the idea to the sequential development of a definition.

Question 3(b) - all forms

Though the mean gain here was significant, it was small and still left the students low on the scale. On the pre-test, the students tended to relate their personal development of an understanding of money, rather than apply this development to the concept of a definition. They assumed the growth of their concept of money to parallel their chronological growth. On the post-test, however, the students were able to relate more adequately their concepts of money and of definition.

Question 4(a) - Form A

The gains on this question were very significant as indicated by a mean gain of over 1, which was the highest of any question. On the pre-test, the students tended to restate the question without describing it in terms of a step-by-step procedure. But, on the post-test, they were able to see the parallel development in economics and the construction of a house. The conception of building the structure of economics was inherent throughout the materials.

Question 4(b) - Form A

On the pre-test, the students tended to group the individual related events as a whole rather than as an analytical chain of related events with value added. On the post-test, however, they had a well-defined approach to answering the question and included the concept of value added. The Route of the Suit was presented as the first learning situation in Unit 7, and the students were able to transfer the knowledge gained there to the answering of this particular question.

Question 5(a) - Form A

The group made no significant gain on this question, which was a very subtle one. Typical answers on both the pre-test and the post-test stated that one form was a statement of fact while the other was a question or someone wondering about a fact.

Question 5(b) - Form A

A small gain was apparent in this part of question 5 as opposed to the first part. On the pre-test, the students tended to repeat the question or to give grammatical differences. On the post-test, they were more able to recognize part 1) as an economic fact and part 2) as an indirect statement requiring further analysis. Their course experience, especially with the concept of specialization, presumably made some difference here.

Question 4 - Form B

One can consider part a) and part c) together since they both involved grouping, and the way in which the students did this varied with the individual. Most of the students were able to make at least one correct grouping on the pre-test as indicated by the mean of 2.88 on part a). There was a slight gain on the post-test of students who were able to make two correct groupings, as indicated by the gain on part c).

One can also consider part b) and part d) together since the order of the students' answers depended upon their decision for grouping. However, there was a significant gain in part b) which indicates that more of the students were able to give at least one valid explanation. Fewer students were able to give correct explanations for both groupings. The explanation for the grouping of addition-multiplication and subtraction-division was the one students were able to explain most satisfactorily.

Some variation was noted between schools, especially in the terminology employed, i.e., "inverse" or "opposite". Most of the unsatisfactory explanations described the grouping as "easier-harder", or "the order in which they were learned in school", or "larger or smaller answers". There was evidence that the strength of the mathematics program was the most important influence on the quality of the answers.

Question 5(a) - Form B

There was a highly significant gain on this question as the mean score increased almost one point. Initially, the students saw little relationship or said only that income was a reward for work. At the end of the course, they were able to understand the flows between production and consumption more readily. This material was covered in Unit 7 by the learning situation on the twin flows.

Question 5(b) - Form B

There was a significant average gain of a half point on this question. On the pre-test, the students tended to repeat the question or were incapable of understanding that total production would have to equal total income. On the post-test, the students were better able to see the relationship as one of equality, although many still did not understand this concept. This was included in the materials in Unit 7 which discussed the twin flows and their interaction and equality.

Question 5(c) - Form B

On the pre-test, the students did not understand that production would cease if there was only saving in a society. However, there was a significant gain on the post-test as many of the students recognized the relationship between spending, saving, and disequilibrium. This was included in Unit 11, which treated the interaction of the savings and investment flows and the problems resulting from an imbalance. This question also had some relevance to Situation 3 in Unit 11 which discussed the multiplier.

Question 4(a) - Form C

Though the quality of student responses increased markedly, few students attained the level of understanding whereby they viewed all of the activity as determined in the market place. Initially, students had little or no concept of the market place as they viewed the activity on the island; their questions reflected curiosity about the sociological relationships among the people. At the end, their answers dealt with resources, the nature of the islanders' economic system, and goods produced, with some degree of relationship and communication indicated. Gains here may best be attributed to Unit 15, which presented the three basic types of economic systems and compared the way in which decisions are made.

Question 4(b) - Form C

The failure of the students to show significant gains may have been a result of their inability to correlate the underlying concepts of each unit and apply them to a practical situation. Supply and demand were not emphasized per se, but these concepts were included in Units 1-4 as part of basic economic decisions.

Question 4(c) - Form C

Although the students exhibited an over-confident familiarity with the terms--supply and demand--and a penchant to use them, their answers on the post-test reflected an increase in understanding relationships. On the pre-test, wants and goods and services were only related to the isolated situations of products "manufactured" and products sold without their being tied to the market. On the post-test, the quality of the answers increased; students had learned the function of the market-place in determining supply and demand. This material was presented in Units 3 through 6 as the basic economic decisions which every society must make.

Question 5(a) - Form C

Although this question was of a non-economic nature, the understanding of communication increased. The broader understanding of communication was indicated by answers which included other forms of communication, especially the interaction of signals and dollar votes between the producer and consumer in the market.

Question 5(b) - Form C

The concept of prices was a part of the understanding of all the concepts of the economics course. The students apparently did not relate "prices" to the concepts nor did they progress to the higher level of combining the practical application of price changes to the theory--namely, that elements, other than the theoretical, influenced supply and demand for goods.

APPENDIX E

Name _____
(Print) Last First Middle Initial

School _____ Date _____, 1966

E N D - O F - C O U R S E Q U E S T I O N N A I R E

COURSE IN NINTH GRADE ECONOMICS

January, 1966

General Directions

Open the booklet when your teacher tells you to go ahead. Please read the directions for each part carefully. If you have a question about the directions, ask your teacher for help. Your answers will be kept confidential and used only for research purposes.

Developed by the Social Studies Curriculum Center

The Ohio State University

Page 2. (Opinions about Outcomes of Economics. Repeated.)

Page 3. (Items 1-3 below.)

Directions for questions 1 through 4. Please place a check mark (✓) in the space to the left of the one statement with which you most agree.

1. How would you judge the amount of material covered in the course?

___ a) We had much too much material for us to cover in one term.
___ b) We had somewhat more material to cover than we had time for.
___ c) The amount of material covered was about right.
___ d) We had somewhat less material to cover than we could have covered.
___ e) We had too little material to cover; there was time for much more.

2. How well did you like this course in economics?

___ a) I liked it very much.
___ b) I liked it somewhat.
___ c) I neither liked nor disliked it.
___ d) I disliked it somewhat.
___ e) I disliked it a lot.

3. How hard did you find this course in economics, as compared to other subjects you took during this same term?

___ a) It was the hardest subject I took.
___ b) It was one of the harder ones but not the hardest.
___ c) It was about average in difficulty.
___ d) It was one of the easier ones but not the easiest.
___ e) It was the easiest subject I took.

Page 4. (Items 4-6 below.)

4. Suppose you were asked whether you would recommend this course in Economics as a subject for next year's ninth-grade classes in your school. What would your recommendation be?

___ a) I would not especially recommend it.
___ b) I would have no particular feelings either way.
___ c) I would feel inclined to recommend it.

Please give your reasons for the opinion you just gave. (space allowed)

5. In what way did this course in Economics not turn out to be what you thought it would be? (space allowed)

6. In what way did it turn out to be what you thought it would be? (space allowed)

Page 5.

WORD ASSOCIATIONS

Directions

In the remainder of this booklet, we will try to find out how you describe different kinds of things. There is no "right" or "wrong" answer; we just want to know what you think about certain topics.

At the top of each of the following pages there is a word or phrase for you to describe. Each pair of words forms a scale. By marking the corresponding box on the page, you can indicate what you associate with the particular word or phrase.

For example:

If you feel that the topic named at the top of the page is very closely associated with one end of the scale, you would mark the page as follows:

fair A ■ B C D E unfair OR fair A B C D ■ E unfair

If you feel that it is somewhat related to one or the other end of the scale you would mark the page as follows:

fair A B ■ C D E unfair OR fair A B C ■ D E unfair

If you consider both sides equally associated, you would mark the middle space on the page as follows:

fair A B ■ C D E unfair

Remember: never give more than one answer to each item. And also be sure to mark every item. Do not omit any item.

Do not spend more than a few seconds marking each item. Your first impression is what we would like to learn about. We have found you can work more quickly if you first form a picture in your mind of the thing mentioned at the top of each page, and after that you mark each item very rapidly.

When you finish one page, go on to the next. When you finish the booklet, do not go back and change any ratings you made.

Page 6.

ECONOMICS

1.	useful	A	B	C	D	E	impractical
2.	vague	A	B	C	D	E	clear
3.	exciting	A	B	C	D	E	dull
4.	confused	A	B	C	D	E	organized
5.	enjoyable	A	B	C	D	E	unenjoyable
6.	boring	A	B	C	D	E	interesting
7.	good	A	B	C	D	E	bad
8.	difficult	A	B	C	D	E	easy
9.	definite	A	B	C	D	E	indefinite
10.	unimportant	A	B	C	D	E	important

Pages 7 - 10. (Same as page 6 except that the stimulus words were, in turn, MATHEMATICS, HISTORY, SCIENCE, THIS COURSE IN ECONOMICS.)

APPENDIX F

AN INSTRUMENT FOR MEASURING THE DEGREE OF TEACHER ADHERENCE TO THE DISCIPLINE APPROACH

I. Outline of the Instrument

Section One - The Teacher's Adherence to the Unfolding Structure

Section Two - The Degree to which a Teacher Creates an Environment for Overt Student Involvement With the Initial Formulation of Concepts and Linkages

Section Three - The Effectiveness of the Teacher's Behavior in Terms of the Objectives of the Discipline Approach

Section Four - A Brief Description of Each Teacher's Implementation of the Discipline Approach

II. Instructions for the Use of the Instrument

A. You are asked to isolate, to the best of your ability, the two aspects of teacher behavior which form the basis for the first two sections of the instrument. The third section of the instrument requires you to make a judgment concerning the interrelation of the previous ratings plus any other variables that affected your judgment. (The fourth section of the instrument will allow you opportunity to state the additional variables about which you were aware.) The first three sections are:

1. To what extent did the teachers adhere to the unfolding sequence of concepts as set forth in Part I of the Teacher's Guide? In operational terms, adherence is defined as the explicit statement of particular lesson concepts and the concepts of preceding lessons. In both cases, the explicit statements may be made by either teacher or students.

2. To what extent did the teachers create an environment which promoted overt student involvement with the initial formulation of concepts and linkages for themselves?

3. In terms of the objectives of the discipline approach, what is your judgment as to the relative effectiveness of the teachers observed? The objectives of the discipline approach

are defined here as: (1) to have students learn a set of economic concepts, (2) to have students understand at least one logical way of interrelating this set of economic concepts, and (3) to have the students demonstrate their ability to retain the interrelationship through application to new situations.

B. The first three sections of the instrument contain rating scales with a range from 1 to 10. Theoretically, it is possible that one of the teachers would fit the criteria for a 1 rating and another teacher the criteria for a 10 rating on each section. Furthermore, it is also theoretically possible that the remaining eight teachers would, in the judgment of the observer, each be separated by the same interval. (Thus, all the intervals would be identical.) It is also possible, however, that in the judgment of the observer, the variation between some teachers on a particular scale may be so slight that it does not warrant placing them at different levels. For this reason, each level is provided with ten spaces. This allows for the theoretical possibility that no significant variation (according to the observers point of view) exists between the ten teachers. Each of the rating scales, therefore, provides the observer the opportunity to rank order the teachers and also give some degree of indication as to the interval he perceives between the rankings. The example below shows one possible array of ratings on one section (Section Three) with an explanation given of the interpretation attached to the indicated ratings. This example may be taken as a model for the scales in the first three sections.

Illustrative Example of Scoring and Interpretation of the Third Rating Scale

Section Three - The Effectiveness of the Teacher's Behavior in Terms of the Objectives of the Discipline Approach

Example:

1.	___	___	___	___	___	___	___	___	___	___
2.	P	___	___	___	___	___	___	___	___	___
3.	M	U	___	___	___	___	___	___	___	___
4.	___	___	___	___	___	___	___	___	___	___
5.	___	___	___	___	___	___	___	___	___	___
6.	N	O	V	___	___	___	___	___	___	___
7.	___	___	___	___	___	___	___	___	___	___
8.	Q	T	___	___	___	___	___	___	___	___
9.	___	___	___	___	___	___	___	___	___	___
10.	R	S	___	___	___	___	___	___	___	___

Teacher P is considered the most effective of the ten teachers and the observer predicts a statistically significant difference between the adjusted mean gains of P's students and those of M or U's students. No significant difference in performance is predicted between M and U's classes. No significant difference in performance is predicted between the classes of teacher N, O, and V. It is predicted that the adjusted mean gain scores of the students in the classes of teacher's N, O, and V will vary from the scores of M and U's classes more than the variation between M and U's classes and P's class. The variation between the scores of Q and T's classes and scores of N, O, and V's classes will be less than the variation between N, O, and V's classes and those of teachers M and U's Classes. The scores of R and S's classes will vary from those of Q and T's classes to the same degree that the scores of Q and T's classes vary from those of N, O, and V's classes. In terms of statistically significant units of variation, teacher P's students will show eight units of variation from the students of R and S's classes.

C. Section Four - A Brief Description of Each Teacher's Implementation of the Discipline Approach

The primary purpose of this section is to have the observer give a brief verbal description of each teacher's adherence to the

structure outlined in the Teacher's Guide and the types of teaching strategies chosen by each teacher to implement his instruction.

This section also provides the observer with the opportunity to express other variables not emphasized by the scales of the first two sections which he feels may have influenced the teacher's effectiveness.

The following account is an example of the kind of descriptions you are asked to write. As a complete entity, it does not describe any of the teachers observed.

A Fictional Description of Mr. X

Mr. X very carefully follows the sequence of concepts prescribed by the Teacher's Guide during four of the five weekly class periods. Several remarks that he made during the observations indicated that one period a week is set aside as a current events day. His references also indicated that the choice of current events discussed on that day had no direct relationship to the concepts of the economics course. In all the observations he used only one general teaching strategy. The class was directed to read the lesson setting in the Student Materials. He then asked the questions suggested in the Teacher's Guide to focus discussion. Instead of allowing the students to struggle with the formulation of the concepts, he prematurely closed the discussion by telling them the concepts. He then proceeded to check their understanding by asking them to recite the concepts. He was patient with student errors and willing to repeat his formulations of the concepts until the students responded correctly to his formulations. Mr. X has taught in the same school for over twenty years. He seems to have built a reputation as a "good" teacher. Furthermore, he also teaches twelfth grade classes and is in charge of the student council in this large school. It is this observer's opinion that these factors influence the desire of many of his students to do well in his classes.

III. The Use of the Record of Grid Ratings

Included with the instrument is the record of your ratings on the two dimensional grid used in the classroom observations. You may choose: (1) to ignore this record completely as you fill out the sections of the instrument, (2) to make casual references to the record, (3) to use the record for deciding borderline decisions, (4) to rely heavily on the record, or (5) to rely completely on the record for making your decisions. You are asked to make a separate decision about your use of the grid ratings for each of the first three sections of the instrument. Do not make the decision about the use of the instrument until you have completed the ratings for

a section. Take care to isolate your decisions about the use of the grid ratings for each of the three sections.

IV. Completing the Two Copies of the Instrument

You have received two copies of the instrument and a blank tablet. One copy of the instrument and the tablet are provided for making a preliminary draft. The second copy is to be completed in ink and is to represent your final judgment.

The Instrument

Section One - The Teacher's Adherence to the Unfolding Structure

A rating of 1 indicates a highly consistent pattern of behavior in which the lesson concepts and the linkage to the concepts of the preceding structure were both made explicit.

A rating of 10 indicates a highly consistent pattern of behavior in which neither the lesson concepts nor the linkage to the concepts of the preceding structure were made explicit.

(1 represents highest rating)

1. ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
2. ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
3. ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
4. ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
5. ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
6. ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
7. ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
8. ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
9. ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
10. ____ ____ ____ ____ ____ ____ ____ ____ ____ ____

Which of the following five statements best describes your use of the grid ratings in making the decisions on this scale:

1. I ignored the grid ratings completely. ____
2. I made casual references to the grid ratings. ____
3. I used the grid ratings to make borderline decisions. ____
4. I relied heavily on the grid ratings in making decisions. ____
5. I relied completely on the grid ratings for the decisions. ____

Section Two - The Degree to which a Teacher Creates an Environment for Overt Student Involvement with the initial Formulation of Concepts and Linkages

A rating of 1 indicates a highly consistent pattern of behavior in which the teacher creates a classroom environment where the students are encouraged to make the original formulation of the lesson concepts and the linkage to previous concepts for themselves.

A rating of 10 indicates a highly consistent pattern of behavior in which the teacher creates a classroom environment where the students are not given the opportunity to make the initial formulation of the lesson concepts and the linkage to previous concepts for themselves.

(1 represents highest rating)

1. ___ ___ ___ ___ ___ ___ ___ ___ ___ ___
2. ___ ___ ___ ___ ___ ___ ___ ___ ___ ___
3. ___ ___ ___ ___ ___ ___ ___ ___ ___ ___
4. ___ ___ ___ ___ ___ ___ ___ ___ ___ ___
5. ___ ___ ___ ___ ___ ___ ___ ___ ___ ___
6. ___ ___ ___ ___ ___ ___ ___ ___ ___ ___
7. ___ ___ ___ ___ ___ ___ ___ ___ ___ ___
8. ___ ___ ___ ___ ___ ___ ___ ___ ___ ___
9. ___ ___ ___ ___ ___ ___ ___ ___ ___ ___
10. ___ ___ ___ ___ ___ ___ ___ ___ ___ ___

Which of the following five statements best describes your use of the grid ratings in making the decisions on this scale:

1. I ignored the grid ratings completely. ___
2. I made casual references to the grid ratings. ___
3. I used the grid ratings to make borderline decisions. ___
4. I relied heavily on the grid ratings in making decisions. ___
5. I relied completely on the grid ratings for the decisions. ___

Section Three - The Effectiveness of the Teacher's Behavior in Terms of the Objectives of the Discipline Approach

A rating of 1 indicates that, in the observer's judgment, the teacher or teachers exhibit the combination of teacher behaviors that will produce the highest effectiveness of instruction. With the Project Materials, effectiveness of instruction is defined as student gains on the learning outcomes measures used in the evaluation of the Project Materials.

A rating of 10 indicates that, in the observer's judgment, the teacher or teachers exhibit the combination of teacher behaviors that will produce the least effectiveness of instruction with the Project Materials. Effectiveness of instruction is defined as student gains on the learning outcomes measures used in the evaluation of the Project Materials.

The observer should first ask himself what total variation he believes will exist between the class or classes that he thinks will show the greatest mean gains and the class or classes he thinks will show the least mean gains. This decision will provide the observer with his own framework for making decisions about the variation in the remaining classes. Remember that all the classes will be statistically matched groups in terms of covariance adjustments for I.Q. and pretest scores.

The learning outcomes measures used by the evaluation design of the Economic Curriculum Project will be statistically treated in order to show the variation in adjusted mean gains by classes. Section Three asks you to make a prediction of these results. The question here is to what degree will an observer's judgment of the effectiveness of teacher behavior correlate with the Project measures of student performance.

(1 represents highest rating)

1.	___	___	___	___	___	___	___	___	___	___
2.	___	___	___	___	___	___	___	___	___	___
3.	___	___	___	___	___	___	___	___	___	___
4.	___	___	___	___	___	___	___	___	___	___
5.	___	___	___	___	___	___	___	___	___	___
6.	___	___	___	___	___	___	___	___	___	___
7.	___	___	___	___	___	___	___	___	___	___
8.	___	___	___	___	___	___	___	___	___	___
9.	___	___	___	___	___	___	___	___	___	___
10.	___	___	___	___	___	___	___	___	___	___

Which of the following five statements best describes your use of the grid ratings in making the decisions on this scale:

1. I ignored the grid ratings completely. ____
2. I made casual references to the grid ratings. ____
3. I used the grid ratings to make borderline decisions. ____
4. I relied heavily on the grid ratings in making decisions. ____
5. I relied completely on the grid ratings for the decisions. ____

Section Four

Teacher _____ (Use Code Letter)

Observer's Name _____

(Ten similar pages were included in the Instrument)